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04-AFC-1	
DATE	MAR 17, 2006
RECD.	MAR 17, 2006

STATE OF CALIFORNIA

Energy Resources Conservation and Development Commission

In the Matter of:)
)
 Application for Certification)
 For the San Francisco)
 Electric Reliability Project)

Docket No. 04-AFC-01

PREHEARING CONFERENCE STATEMENT OF THE CITY AND COUNTY
 OF SAN FRANCISCO

In accordance with the Notice of Prehearing Conference issued on February 24, 2006, (PHC Notice) the City and County of San Francisco (City or CCSF) respectfully files this Prehearing Conference Statement. As described in more detail herein, the City considers that this matter is ready to go to hearing and that evidentiary hearings should be scheduled as soon as possible.

The PHC Notice directed parties to file Prehearing Conference Statements addressing the following matters:

1. The topic areas that a party believes are complete and ready to proceed to evidentiary hearings;
2. The topic areas that a party believes are not complete and not yet ready to proceed to evidentiary hearings, and the reasons therefore;
3. The topic areas that remain disputed and require adjudication, and the precise nature of the dispute for each topic;
4. The identity of each witness a party intends to sponsor; the topic area(s) upon which each witness will present testimony; a brief summary of the substantive testimony to be offered by each witness; qualifications of each witness; and the time required to present direct testimony by each witness;
5. Topic areas upon which a party desires to cross-examine witness(es), a summary of the scope of such cross-examination, and the time desired for such cross-examination;
6. A list identifying the exhibits and declarations that each party intends to offer into evidence and the technical topics to which they apply;
7. Proposals for hearing dates, briefing deadlines, vacation schedules and other scheduling matters.
8. For all topics, the parties shall review the proposed Conditions of Certification contained in the Final Staff Assessment for enforceability, comprehension, and consistency with the evidence, and submit any proposed modifications.

This prehearing conference statement addresses each of these matters. Where appropriate, several of the matters have been covered within a section.

I. Areas Ready to Proceed to Evidentiary Hearings.

The City believes that all topic areas are complete and ready to proceed to evidentiary hearings. The City is aware however, that issues have arisen regarding the contaminated soil on the premises that may give rise to an argument by other parties that additional time is needed with regards to this issue. For the reasons explained below, the City believes that this issue is ready for evidentiary hearings. Moreover, to address concerns raised by other parties, the City will make available to California Energy Commission (CEC) staff and the service list the results of additional soil sampling prior to the prehearing conference.

Prior human health and ecological risk assessments of the Western Pacific Area, including the site for the San Francisco Electric Reliability Project (SFERP) have concluded that there are no significant risks associated with the contaminated soil in light of existing and ongoing risk management practices. In particular, in 2000, a Human Health and Ecological Risk Assessment was prepared for the Port of San Francisco by Geomatrix Consultants for an area that included the site for the SFERP and an additional plot to the east ("Geomatrix Consultants, 2000"). The assessment concluded for both plots that:

- "The estimated noncancer hazard indexes and theoretical excess cancer risks are at or below the acceptable level for the area for future high-density housing residents, future commercial works, future industrial workers, future maintenance workers, future recreational users, future construction workers, current youth trespassers, and off-site residents . . ." Geomatrix Consultants, 2000 at 36.
- The assessment notes that the estimated noncancer hazard indexes and theoretical excess cancer risks are above the levels generally considered to be acceptable by regulatory agencies for a future resident in a single-family home. Id.
- The estimated blood lead levels for all receptors, except the future single-family home child resident are below the level of concern adopted by Cal-EPA or the level of concern established in California's Lead in Construction standard for construction workers. Id.

- No remedial actions are warranted if the parcels are developed for high density housing, commercial, light industrial, or recreational uses. Id. at 37.
- The chemicals detected in the groundwater are not expected to pose a significant risk to aquatic organisms. Therefore, no remedial action is anticipated to be protective of ecological receptors. Id. at 37.

The Geomatrix Consultants, 2000 assessment acknowledges that the requirements of the City and County of San Francisco Ordinance 253-86 Article 22A ("Maher Ordinance") will need to be met if proposed future development will disturb more than 50 cubic yards. Id. The City indicated in Supplement A that it will comply with the requirements of the Maher Ordinance. See Supplement A at 8.13-8.

In addition, in Supplement A, the City explained that the Geomatrix Consultants 2000 assessment was approved by the Regional Water Quality Control Board (RWQCB). It led to two deed restrictions for the relevant properties. The deed restriction for the property adjacent to the SFERP site that is currently used by the San Francisco Municipal Railway requires owners or lessees of the property to comply with a site-specific Final Risk Mitigation Plan and Site Management Plan (RMP/SMP), MUNI Metro East Light Rail Vehicle Maintenance and Operations Facility, San Francisco Municipal Railway (AGS, Inc., 2000). The City has agreed to comply with the RMP/SMP on the SFERP site. As set forth in Supplement A, the RMP/SMP includes the following mitigation measures:

- Provide site security.
- Develop and implement a site-specific health and safety plan prior to any development activities at the site.
- Provide adequate dust control measures during construction.
- Minimize groundwater contact by construction workers.
- After site development maintain covering on the site (asphalt or two feet of clean fill) implement management protocols for future subsurface development, maintain groundwater restrictions, and agency notification in the event of a change in property use.

Despite this background, in the Preliminary Staff Assessment, Final Staff Assessment and during associated workshops, staff has requested the City to undertake additional site-

specific soil, groundwater and soil gas sampling and analysis. Although the City believes that the site has been adequately characterized, and that there is ample data and analysis to support the sufficiency of the mitigation measures set forth in the RMP/SMP, the City has been seeking to cooperate with staff, the SFBRWQCB, and the San Francisco Department of Health (SFDPH) which administers compliance with the Maher Ordinance, to ensure that its activities to comply with the Maher Ordinance¹ are undertaken in a manner that satisfies all agencies. However, the City sees no reason why this process should result in a delay in licensing of the facility.

The Maher Ordinance provides for, among other requirements, soil sampling and analysis, the preparation of a Soil Analysis Report, and, if hazardous wastes are found to be present, the preparation of a Site Mitigation Plan that either: 1) documents that the contamination will not cause significant environmental or health and safety risks, or 2) recommends that mitigation measures be taken to mitigate the significant environmental or health and safety risks caused by or likely to be caused by the contamination in the soil.

In furtherance of the objective of complying with the Maher Ordinance in a manner that satisfies all relevant agencies, the City is proceeding now with soil sampling and analysis. The City:

- prepared and provided to staff, the SFBRWQCB, SFDPH and the Department of Toxic Substances Control (DTSC) a draft field sampling plan, that was docketed and served on the service list on January 24, 2006;
- attended a meeting called by the SFBRWQCB to discuss the draft field sampling plan that was attended by SFDPH, DTSC and certain CEC staff;
- revised and finalized the field sampling plan (FSP) and provided it to CEC staff, the SFBRWQCB, SFDPH and DTSC, and docketed it and served it on the service list on February 14, 2006. The SFRWQCB approved the final FSP in a letter dated February 16, 2006;
- conducted the field work in accordance with the FSP in the presence of CEC staff.

¹ The City and CEC staff disagree about the requirements of the Maher Ordinance. The City does not, by nature of agreeing to the framework set forth herein, waive its rights to argue in this case and others that the requirements

The City is willing to accept conditions of certification that provide for compliance by the City with the Maher Ordinance, in a manner that is acceptable to the SFBRWQCB, the SFDPH and the CEC. Thus, the City considers that the issues associated with the contaminated soil on the site are ready for evidentiary hearing and that the concerns by staff can be adequately addressed by the conditions of certification discussed above.

At the FSA workshop, intervenor Michael Boyd voiced the concern that the City is seeking to delay soil characterization and the identification of mitigation measures until after licensing. The discussion above documents that the site has been adequately characterized and that specific mitigation measures have been identified that are supported by adequate data and analysis. The City should not be faulted for a willingness to cooperate with staff, the SFRWQCB and the SFDPH to ensure that all agencies are satisfied by the City's ongoing activities to comply with the Maher Ordinance.

In addition, to ameliorate as much as possible the concerns voiced by Mr. Boyd, the City is seeking to accelerate its activities to comply with the Maher Ordinance as much as possible. The City expects that the results of the field sampling will be available before the prehearing conference. The City will provide these results to the relevant agencies as soon as they are available, and will, as it did with the draft and final Field Sampling Plans, at the same time docket and serve the results on the service list. Thus, there is no need to delay evidentiary hearings as all parties will have the results for the additional sampling prior to the hearings, and will be able to use the results to further assess the sufficiency of the mitigation measures set forth in the RMP/SMP.

II. Disputed Topic Areas and Recommendations on Changes to the Conditions of Certification:

under Maher Ordinance are less extensive than the activities the City is willing to undertake in this case.

The City is submitting along with this prehearing statement its comments on the FSA which include the City's proposed changes to the conditions of certification. Based on the discussions during the workshop held on May 6, the City is hopeful that all or most of its concerns can be addressed by stipulation. Thus, the City is optimistic that by the time evidentiary hearings take place, there will be no issues or only a very limited number of items at issue between the City and CEC staff that will require adjudication. The City will not speculate on the nature or scope of disputed issues raised by intervenors which should be described in their respective prehearing conference statements.

Air Quality:

- In response to comments by Mr. Sarvey, the Bay Area Air Quality Management District (BAAQMD) lowered the PM10 emission limit for the SFERP from 3 lbs/hr to 2.5 lbs/hr in its final determination of compliance (FDOC). The FSA retains a 3 lbs/hr level. To avoid a discrepancy between the FDOC and the CEC license, the City considers that the 2.5 lbs/hr limit should be used. During the FSA workshop, air staff indicated that it would discuss the matter with the BAAQMD.
- Proposed Condition AQ-SC3 Construction Fugitive Dust Control limits vehicle speeds within the construction site to 10 miles per hour. This limitation is inconsistent with the discussion and with conditions imposed on other projects which specify a limit of 15 miles per hour. The City is hopeful that staff will agree to replacing 10 miles per hour with 15 miles per hour in AQ-SC3.
- The City has requested that Proposed Condition AQ-SC8 be amended to delete a reference to quarterly permit limits as there are none. The City is hopeful that staff will agree to this change.
- Proposed Condition AQ-12 and the related verification are inconsistent. The City has requested that both indicate that source test results should be submitted to the District and the CPM within 60 days of the source testing date. The City is hopeful that staff will agree to this correction.

Cultural:

- Proposed Condition CUL-6, contains a reference to a pumping plant that is no longer a component of the proposed project. For the sake of clarity, the City has requested deletion of this reference.

Hazardous Materials:

- The City has requested that staff review the elimination of the ammonia underground vault as it has a relatively small benefit and it is not required by Condition of Certification HAZ-4.
- Proposed Condition HAZ-9, item 10, requires a person on site 24-hours a day. The City has requested that this requirement be changed to having a person monitor the security

cameras 24 hours a day. During the FSA workshop, staff indicated that this change would be acceptable.

- The City has requested clarification of Proposed Condition HAZ-9, Verification. During the FSA workshop, staff agreed to replace the language “30 days prior to the initial receipt of hazardous materials on-site” “with “prior to receiving any hazardous material on the site for commissioning or operations.”

Noise and Vibration:

- Proposed Condition NOISE-4, Part A and Verification: the language “project first achieves a sustained output of 80 percent” is somewhat vague. The City has requested that the language be changed to “within 30 days of the project being COD.”
- The City has requested that the 25-hour community noise survey required by Proposed Condition NOISE-4, Part A, be limited to a shorter period of time during the day when the plant is likely to be needed.
- The City has requested a clarification to Proposed Condition NOISE-4, Verification. The 15 days in the verification section (both the first and second paragraphs) should be clarified to mean “15 business days.”

Soil and Water Resources and Waste Management:

- As described above, the City considers that the site has been adequately characterized and that the mitigation measures set forth in the RMP/SMP are adequate. Moreover, the City will comply with the Maher Ordinance and is willing to do so in a manner that is acceptable to the SFBRWQCB, the SFDPH and the CEC. The City has requested that the Soil and Water Resources and Waste Management sections and associated conditions of certification, be made consistent with the terms used in the Maher Ordinance, be consistent between the sections, and avoid use of terms that might be misinterpreted such as “treatment” and “remediation”.

Waste Management

- WASTE-3: The condition should state that the project owner shall obtain a hazardous waste generator identification number from Cal EPA (DTSC) or US EPA as appropriate depending on the nature of the waste. During the FSA workshop, staff indicated that this change would be acceptable.
- WASTE-4. The City noted that the requirement to report enforcement actions should be limited to those related to the facility and its waste. During the FSA workshop, staff indicated that it would consider proposed language from the City.
- WASTE-6. The City noted that use of the standard RI report format is unduly burdensome. At the workshop, staff clarified that the condition refers to the general standard RI report outline. With this clarification, the condition is acceptable.
- WASTE-7: The City has explained that the SFBRWQCB is unwilling to formally extend the MUNI site deed restriction to the power plant site at this time pending completion of the additional work to be undertaken in compliance with the Maher Ordinance. A better approach would be to have the City prepare a proposed deed restriction at the conclusion of the process to comply with the Maher Ordinance and to submit it to the SFBRWQCB for its review and comment and to the CMP for review and approval. In addition, a condition of certification can be added requiring the City to comply with the RMP/SMP.

Paleontology

- The City agrees with staff that the "the probability that paleontological resources will be encountered. . . to be high when native materials are encountered. . ." (p. 5.2-9, last paragraph; also p. 5.2-5, 2nd paragraph) and has suggested minor revisions to PAL-2, 3 and 4 to focus activities to construction in native materials.

III. City Witnesses, Testimony and Exhibits:

The City believes that a large number of areas will be amenable to resolution by stipulation. For any such areas, the City will rely on the documentary record that has been created to date, which it will seek to introduce formally into the record by stipulation during the evidentiary hearings. In the event that there are outstanding issues among the City and other parties with regard to a particular section that require calling a witness for cross examination, the City has identified in Table 1 below, the witnesses who will sponsor particular sections of Supplement A and associated data responses. For certain topics a panel of witnesses is identified. The qualifications of each of the identified witnesses are attached to this prehearing conference statement as Appendix A. The City expects that, for any witness or panel called, 30 minutes will be required for the presentation of direct testimony including the identification of the documentary evidence that has already been submitted regarding the topic. Depending on the scope of any disputed issues, the City may, at the prehearing conference request additional time to present direct testimony on particular topics, based upon review of the prehearing conference statements of other parties.

Parties have received copies of Supplement A and the City's data responses. At this time the City is not planning to introduce additional substantive testimony although this may change based on a review of the prehearing conference statements of other parties. Table 2 below briefly describes the subject areas that are covered by Supplement A and associated data

responses. Appendix B sets forth the initial list of exhibits that the City intends to introduce by topic area. The City expects to refine this list in preparation for the prehearing conference.

Table 1:
Topic Areas in Supplement A and Associated Witnesses

Executive Summary	Barbara Hale, Karen Kubick
Project Description	Karen Kubick, Steve Brock, Steve DeYoung
Purpose and Need	Barbara Hale, Barry Flynn
Environmental Justice	Barbara Hale, Karen Kubick, Anne Eng
Environmental Justice/Air Quality: PM10 Mitigation/Community Benefits	Karen Kubick, Anne Eng, Gary Rubenstein
Electric Transmission	Steve Brock, Barry Flynn
Natural Gas Supply	Steve Brock
Water Supply Pipelines	Steve Brock, Karen Kubick, Matt Franck
Air Quality	Gary Rubenstein
Biological Resources	John Cleckler, Gary Rubenstein
Cultural Resources	Doug Davey
Land Use	Steven Smith
Noise	Mark Bastasch
Public Health	John Lowe, Gary Rubenstein
Worker Health and Safety	Sarah Madams
Socioeconomics	Fatuma Yusuf, John Carrier
Agriculture and Soils	Steve Long
Traffic and Transportation	Loren Bloomberg
Visual Resources	Wendy Haydon, Tom Priestley, Gary Rubenstein
Hazardous Materials Handling	Karen Parker
Waste Management	Karen Parker, Karen Kubick, Randall Smith, Steve DeYoung, Tom Lae
Water Resources	Matt Franck, Karen Kubick, Randall Smith, Steve DeYoung, Tom Lae
Geologic Hazards and Resources	Tom Lae
Paleontological Resources	Geof Spaulding
Alternatives	Barbara Hale, Gary Rubenstein, Karen Kubick, Steve Brock, Barry Flynn
Engineering	Steve Brock, Karen Kubick

Table 2:
Brief Summary of Topic Areas.

Executive Summary	Introduction and overview of the project, its objectives, location, ownership, and key benefits
Project Description	Description of project, its components, safety design, reliability and closure

Purpose and Need	The project is consistent with City policy and is needed to support closure of existing in-City generation. The Project will facilitate reduction of NOx emissions, improve reliability, complement a portfolio of energy efficiency, renewable resources and clean distributed generation, support affordable electric bills, and increase local control over energy resources.
Environmental Justice	Southeast San Francisco is a community of color with relatively high rates of serious respiratory diseases that has been disproportionately impacted by industrial facilities including electric power generation. The SFERP generally meets the objectives set forth in Ordinance 124-01 for the development of generation in Southeast San Francisco and will be presented Board of Supervisors for approval of financing and contractual arrangements. The City will offset PM10 emissions from the project.
Environmental Justice/Air Quality: PM10 Mitigation/Community Benefits	Description of the measures proposed for PM10 and PM2.5 mitigation and the process undertaken to identify these measures.
Electric Transmission	Description of the interconnection and the various studies undertaken during the interconnection process and their results. Discussion of transmission line safety.
Natural Gas Supply	Description of the natural gas supply for the SFERP including the proposed natural gas pipeline, the pipeline construction methods and metering station, and pipeline operations.
Water Supply Pipelines	Description of the water supply pipeline routes, and pipeline construction practices.
Air Quality	Description of: the air quality setting, air quality standards, the existing air quality, the affected environment, environmental impacts, consistency with LORS, cumulative impacts, and mitigation.
Biology	Description of applicable LORS, environmental setting, and environmental consequences.
Cultural Resources	Description of applicable LORS, affected environment, environmental consequences, cumulative impacts and mitigation measures.
Land Use	Description of the affected environment, applicable LORS, land use trends, recent discretionary review, environmental consequences, cumulative impacts and mitigation measures.
Noise	Description of the fundamentals of acoustics, the applicable LORS, the affected environment, environmental consequences, and mitigation measures.
Public Health	Description of applicable LORS, the affected environment, environmental consequences, and mitigation measures.

Worker Health and Safety	Description of applicable LORS, setting, and impacts, overview of hazards and related programs and training, health and safety programs, safety training programs, and fire protection.
Socioeconomics	Description of applicable LORS, affected environment, environmental consequences, cumulative impacts, and mitigation measures.
Agriculture and Soils	Description of applicable LORS, environmental setting, potential environmental consequences and mitigation measures.
Traffic and Transportation	Description of applicable LORS, affected environment, environmental consequences, cumulative impacts and mitigation measures.
Visual Resources	Description of the affected environment, environmental consequences, impacts, cumulative impacts and mitigation measures.
Hazardous Materials Handling	Description of LORS, affected environment, potential environmental and human health effects, offsite migration modeling, fire and explosion risk, cumulative impacts, and proposed mitigation measures.
Waste Management	Description of LORS, environmental condition of the site, project waste generation, waste disposal sites, waste management methods and mitigation, cumulative impacts, monitoring, the site characterization work that has been undertaken, the RMP/SMP and associated mitigation measures and compliance with the Maher Ordinance.
Water Resources	Description of applicable LORS, affected environment, project water usage and waste water disposal characteristic, impacts, including cumulative impacts and proposed mitigation measures.
Geologic Hazards and Resources	Description of applicable LORS, setting, resource inventory, impacts and mitigation.
Paleontological Resources	Description of applicable LORS, setting, resource inventory, impacts and mitigation.
Alternatives	The no project alternative does not meet the City's objectives. Alternative sites were either infeasible, did not meet the City's objectives or had similar or increased impacts. Alternative air pollution emission control technologies are infeasible or less desirable than those selected. Alternative technologies do not meet the Cities objectives.
Engineering	Description of facility design, reliability including fuel availability, plant availability, water availability and waste water disposal availability, efficiency.

IV. Cross-Examination Estimates.

As noted above, the City is hopeful that the limited number of issues that remain outstanding between staff and the City can be resolved through stipulation. To preserve its rights, in the event that issues remain outstanding at the time of evidentiary hearings, the City sets forth the following estimates for cross examination. The City also reserves the right to cross examine any witnesses presented by intervenors. The City will offer estimates to the duration and scope of such cross examination upon review of any such testimony.

Air Quality: (Max expected 90 minutes)

- Use of a 3 lbs/hr PM10 emissions limit
- Need for a construction vehicle speed limitation of 10 miles per hour
- Contribution of ammonia emissions from facilities such as SFERP to secondary PM_{2.5} formation
- Existence of a quarterly permit limit
- Appropriate time frame for the submission of source test results to the CMP

Hazardous Materials (Max expected 30 minutes)

- Benefits of an ammonia underground vault
- Need for a person on-site for 24 hours

Noise and Vibrations: (Max expected 20 minutes)

- Need for a 25 hour community noise survey

Soil and Water Resources (Max expected 120 minutes)

- Adequacy of existing soil characterization and proposed mitigation measures

Waste Management (Max expected 120 minutes)

- Adequacy of existing soil characterization and proposed mitigation measures

Paleontology (Max expected 30 minutes)

- Need for paleontological monitoring in disturbed soils and fill

V. Scheduling Matters.

The City would like to move forward with evidentiary hearings as soon as possible. This is necessary to ensure that licensing takes place in time for approval of key contracts and financing for the SFERP by the San Francisco Board of Supervisors before their summer break

during the second half of August. Prior to taking key contracts to the Board of Supervisors, the project will have to be approved by the San Francisco Public Utilities Commission.

Accordingly, the City was hoping to finish licensing by May or June at the latest.

With this background, the City proposes the following schedule for the submission of testimony, evidentiary hearings, and briefing. This schedule has been prepared without knowing the witnesses that will be called for cross-examination by other parties. City will be prepared to discuss refinements to its proposal at the prehearing conference upon review of the prehearing conference statements of other parties.

Proposed Schedule:

April 14, Submittal of testimony (intervenor, City and CEC Staff)
April 20, or 24, Air Quality, Public Health, Environmental Justice, PM10
Mitigation/Community Benefits
April 24, Alternatives
April 24, April 28-or May 1 Evidentiary hearings (if needed) Purpose and Need
April 24-28, Evidentiary hearings (if needed) on Waste Management, Water Resources
May 22, Opening Briefs
May 29, Reply Briefs

In addition, the City has attached Table 3 indicating dates on which particular witnesses are unavailable.

Table 3:
Unavailable Dates for Witnesses and Attorneys.

Witness	Unavailable Dates
Bastasch, Mark	4/13-18
Bloomberg, Loren	Available anytime
Brock, Steve	4/10-14
Carrier, John	4/13-14, 4/19-28; 6/26-7/1
Cleckler, John	4/13-19;
Davy, Doug	6/15-23
De Young, Steve	4/4; 4/13-23; 5/12-15; 5/31; 6/16
Eng, Anne	4/10-15; 5/19
Flynn, Barry	4/17, 4/14-22, 4/27; 5/19, 5/25-26, 5/29; 6/8-9, 6/16, 6/19-23
Franck, Matt	Available anytime

Witness	Unavailable Dates
Hale, Barbara	4/11, 4/13, 4/19, 4/25; 4/26, 5/3, 5/11, 5/18, 5/23, 5/26; 6/5, 6/7, 6/13, 6/15, 6/20, 6/21, 6/27
Haydon, Wendy	4/3; 4/5-4/7; 4/12; 4/17; 4/21; 4/24-5/2; 5/5; 5/12-5/15; 5/17-6/1; 6/27; 6/30
Kubick, Karen	4/21; 4/27; 5/8-9, 5/11, 5/18, 5/26, 6/22-23
Lae, Tom	4/6-4/14
Long, Steve	6/8-7/3
Lowe , John	4/3-7; 5/1-5
Madams, Sarah	4/22; 5/18-19
Parker, Karen	4/3-5
Priestley, Tom	4/10-14; 6/19-6/30
Rubenstein, Gary	4/4; 4/5, 4/7, 4/10, 4/25-5/5; 5/12-6/2, 6/6; 6/8-16
Salamy, Jerry	6/12-23
Smith, Randall	Available anytime
Smith, Steven	Available anytime
Spaulding, Geof	5/1-10
Yusuf, Fatuma	4/11-17
Attorney	Unavailable Dates
Solé, Jeanne	4/27, 5/4, 5/11, 5/18, 5/25, 5/30, 6/8, 6/15, 6/22, 6/29
Varanini, Emilio	5/22

VI. Conclusion.

The City looks forward to the prehearing conference. The City will come prepared to discuss the schedule and to work with the Commission and intervenors to assure an effective and efficient process to conclude evidentiary hearings in this case.

Dated: March 17, 2006

Respectfully submitted:

DENNIS J. HERRERA
CITY ATTORNEY
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Appendix A

Resumes

SFPUC STAFF

Karen Kubick

Anne Eng

Barbara Hale

Randall Smith

OTHER CONSULTANTS

Steve Brock, PB Power

Steve De Young, De Young Environmental Consultants

Barry Flynn, Flynn Resource Consultants Inc.,

Gary Rubenstein, Sierra Research

CH2M HILL STAFF

Mark Bastasch

Loren Bloomberg

John Carrier

John Cleckler

Doug Davy

Matthew Franck

Wendy Haydon

Tom Lae

Steve Long

John Lowe

Sarah Madams

Karen Parker

Tom Priestley

Jerry Salamy

Steve Smith

Geof Spaulding

Fatuma Yusuf

Karen S. Kubick, P.E.

QUALIFICATIONS SUMMARY

- Over 20 years of project and program management experience for major capital projects constructed in the City and County of San Francisco
- Extensive experience implementing a wide range of complex capital projects from planning and design through construction
- 10 years of program management experience overseeing development of infrastructure capital programs, including: securing financing, development of spending plans, schedules, shut-downs plans, and resources plans.

EDUCATION

B.S. M.E. *San Francisco State University, CA, 1987*
Professional Mechanical Engineer State of California #27378, 1991

PROFESSIONAL HISTORY

Manager, Infrastructure Development, SAN FRANCISCO PUBLIC UTILITIES COMMISSION Power Enterprise, San Francisco, CA, 2004 – Present

- Responsibilities include: oversight and management of planning, development, siting, environmental review, design, and implementation of all power transmission, generation, renewable and energy efficiency projects for the San Francisco Public Utilities Commission.
- Responsible for project management of the Combustion Turbine Project including, the day-to-day schedule, scope, quality, budget, task, consultant and inter-Departmental coordination.
- Supervise the Infrastructure Development staff, development and implementation of Capital Programs. Coordination with the Public, the Power Citizen's Advisory Committee, the Power Plant Task Force, the Public Utilities Commission, the Board of Supervisors and the Mayor's Office regarding Power Capital Projects.

Regional Manager of Northern California, RMC ENVIRONMENTAL ENGINEERING, San Francisco, CA, 2003-2004

- Managed the six Northern California (San Jose, Sacramento, San Francisco, Walnut Creek, Novato, Coyote) offices for an Environmental Engineering Firm focusing on water, wastewater and sustainability. Tracked and reported on manpower, backlog, oversaw hiring and personnel management. Participated in marketing efforts, presentations, and project management for various projects. Most projects had major permitting and environmental phases involving CEQA, and NEPA.

Manager, Program Management Bureau, SAN FRANCISCO PUBLIC UTILITIES COMMISSION Capital Improvement Program, San Francisco, CA, 2001 – 2003

- Management of \$3.6 Billion Water Infrastructure Program Management for the Regional Water Transmission, Treatment and Storage System and the Local In-City Water Distribution System. Responsibilities of the group of 100 individuals, included: Project Management, Program Controls and Project Reporting. Responsibilities also included development of Project Alternative and Analysis for the Water Program. The Bureau also responsible for the development of the Wastewater Master Plan, the Recycled Water Master Plan and Replacement, and Renewal Programs for Water and Wastewater.

Project Manager City Distribution Division Capital Improvement Program, Program Management Bureau, SAN FRANCISCO PUBLIC UTILITIES COMMISSION Capital Improvement Program, San Francisco, CA, 1996 – 2003

- Development and implementation of the \$1.0 Billion in-City Water Infrastructure Program Management for the tanks, reservoirs, pump stations, pipelines, and major valves. Management of project planning, design, and construction for numerous projects. Project planning efforts include: development of a hydraulic computer model, physical modeling of reservoirs, development of a system shut-down schedule, development of a project prioritization process, and development of a GIS system for the water infrastructure.
- Responsible for day-to-day project management, program controls, project reporting and resource management; preparation of budgets, spending plans and capital estimates; and, providing primary project interaction with the public. Responsibilities also included development of alternatives, site assessment, environmental review, and applying the appropriate codes and requirements to the projects.
- Projects completed from Planning through construction and start-up include: Clarendon Pump Station, Reservoir Pipeline for Stanford Heights, Sutro and Summit Reservoir, Replacement of University Mound Pipelines, College Hill Reservoir Seismic Upgrade, Sunset Reservoir Repair and Circulation Improvements,

Project Manager, SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS, BUREAU OF ENGINEERING, San Francisco, CA, 1989-1996

- ***Recycled Water Master Plan:*** project manager for the development of a phased program for implementation of tertiary treated recycled water: recycled water treatment, transmission, storage, pumping and distribution. Work included: alternative analysis, conducting pilot study of the impact of use of recycled water on plants typically found in San Francisco Parks; pilot testing of various treating processes including microfiltration, ultraviolet treatment, ultrafiltration, in-line treatment and ozone disinfection. A full three-year programmatic and project specific environmental review was conducted. Responsible for conducting over 100 public meeting, coordination with Recreation and Parks, State Health, County Health, and the Regional Water Quality Control Board.

- ***Zoological Gardens Infrastructure Replacement:*** oversaw study, evaluation, modeling and development of an infrastructure master plan for construction of gas, water, wastewater, stormwater, groundwater, recycled water and electrical infrastructure systems. Utility corridors will utilized to facilitate easy repairs and future exhibit tie-ins. Supported the completion of a complete environmental review for the master plan. Completion of pre-construction mitigation including construction of an avian conservation center and relocation of bald eagles prior to hatching of eggs. The final construction plan had to address consideration of animal breeding seasons, and resulting in over 24 phases of construction. Oversaw consultant selection and management for the planning, EIR, design and construction. Managed City personnel and coordinated with the Board of Supervisors, Recreation and Parks Commission and Zoological Society.

Project Engineer/Staff Engineer, SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS, CLEAN WATER PROGRAM, San Francisco, CA, 1986-1989

Planning, studies, design and designer services during construction for: various wastewater treatment facilities, a wet weather pump station, flooding at the Zoo, selection of bridge and mobile cranes, and selection of a program controls system for the completion of the Clean Water (Wastewater) Program.

Anne Lee Eng

EDUCATION

- 1988 Juris Doctorate Degree
Columbia University School of Law, New York, New York
Honors: Jane Marks Murphy Prize for Clinical Advocacy Work
- 1978 Baccalaureate of Social Work
Rutgers University, New Brunswick, New Jersey
Honors: Dolores Yorba Social Work Scholarship, 1976 and 1977

BAR ADMISSION

State Bar of California, admitted in December 1988

EMPLOYMENT

- 2003-Present *Environmental Justice Program Manager*
City and County of San Francisco, Department of the Environment

Manage the Environmental Justice program of the agency. Responsibilities include: prepare budget; supervise staff; oversee environmental justice grant program; develop projects serving low-income communities; represent the City in administrative proceedings and public meetings; draft legislative framework to promote environmental justice in San Francisco.

- 1994-2001 *Supervising Staff Attorney and Associate Professor*
Environmental Law and Justice Clinic
Golden Gate University School of Law, San Francisco, California

Provided legal services to non-profit and community-based organizations in administrative proceedings and litigation. These services included: analyzing remedial action plans for toxic sites and preparing comments for submittal to the California Department of Toxic Substances Control; representing community groups as intervenors in administrative proceedings before the California Energy Commission regarding the development of a new power plant in San Francisco; representing local groups in administrative hearings before the California Public Utilities Commission regarding PG&E's divestiture of existing local power plants; monitoring Southern California Edison's compliance with a consent decree regarding \$15 million in mitigation measures to address Clean Water Act violations by the San Onofre Nuclear Generation Facility; and representing local community

groups in environmental review of development projects pursuant to the California Environmental Quality Act. Provided educational services to local neighborhood groups in right-to-know and hazard communication workshops. Also, as Associate Professor, I was responsible for co-teaching a weekly seminar class and supervising law students in a clinical setting.

1993-97 *Project Attorney*
Urban Habitat Program, San Francisco, California

Represented a non-profit, environmental organization in monitoring and enforcing Southern California Edison's compliance with a consent decree and provided educational and legal services for an educational program in Southern California.

1991-93 *Project Attorney*
Natural Heritage Institute, San Francisco, California

Represented governmental agencies and public interest organizations in connection with land use and environmental permit proceedings. Analyzed and interpreted federal, state and local environmental statutes. Assisted a Native American tribe develop a hazardous waste regulatory program.

1990-91 *Associate Attorney*
McCutchen, Doyle, Brown and Enersen, San Francisco, California

Researched and interpreted federal and state environmental laws; evaluated potential environmental liabilities and permit requirements for operators of hazardous waste management facilities; counseled clients on enforcement and permitting matters; and monitored remediation of hazardous substance release sites (state and federal "Superfund" sites).

1988-90 *Associate Attorney*
Orrick, Herrington & Sutcliffe, San Francisco, California

Researched and interpreted federal and state environmental laws; analyzed land use and environmental permit requirements; assisted in performing environmental assessments for financing of energy generation facilities; provided pro bono legal services to disabled persons in litigation against wheelchair manufacturer.

CIVIC ACTIVITIES

1993-99 Member and officer, San Francisco Commission on the Environment
Assisted in the planning and development of a new local agency, the Department on the Environment; established and evaluated environmental policies and programs; prepared Commission by-laws and budgets.

ENVIRONMENTAL LAW AND JUSTICE CLINIC

LIST OF SELECTED CASES AND PROJECTS

Our Children's Earth v. Bay Area Air Quality Management District (San Francisco Super. Ct. 2001) – Clinic represents public interest environmental organization in California Public Records Act claims against Air District for failing to disclose public information regarding outstanding Notices of Violation issued to air pollution emitters that have violated the Air District's rules and regulations.

Bayview Hunters Point Community Advocates, et al. v. Metropolitan Transportation Commission (N.D. CA 2000) – Clinic represents community group and environmental organizations in Clean Air Act claims against regional and local transit authorities regarding their failure to implement transportation control measures of the State Implementation Plan.

Bayview Hunters Point Community Advocates, et al. v. Regional Administrator of the Region IX Office of the Environmental Protection Agency (2000) – Clinic represented public interest environmental organizations in administrative petition, securing a decision by the Regional Administrator of U.S. EPA Region IX disapproving the 1999 San Francisco Area Ozone Attainment Plan and making a finding that the Bay Area has not attained the national ozone standard.

In Re Application for Certification for the Mirant Potrero Power Plant Unit 7 Project, California Energy Commission (00-AFC-4, 2000) – Clinic represents community group and public interest environmental organization in administrative proceedings before the California Energy Commission regarding proposed expansion of the Potrero Power Plant in San Francisco.

Tri-Valley CARES v. California Department of Toxic Substances Control (Alameda Super. Ct 2000) – Clinic represents public interest environmental organization in obtaining settlement of CEQA claims regarding development and operation of a hazardous waste storage and treatment facility by Lawrence Livermore National Laboratory.

Communities for a Better Environment and Southeast Alliance for Environmental Justice v. Bay Area Air Quality Management District (San Francisco Super. Ct. 2000) – Clinic represents community group challenging the Air District’s calculation and award of interchangeable emission reduction credits to various large emitters, including ExxonMobil/Valero and Pacific Gas and Electric Company.

ELJC's Past Cases and Projects:

In Re Bay Area Drum Site, California Department of Toxic Substances Control (2000) – Clinic represented local residents and community group in reviewing a remedial action plan approved by the California Department of Toxic Substances Control for a state “Superfund” site.

In Re Application of Pacific Gas and Electric Company in the 1999 Annual Transition Cost Proceeding, California Public Utility Commission (99-09-06, 1999) – Clinic represented community group as intervenor in administrative proceedings before the California Public Utilities Commission regarding PG&E’s application to recover costs for decommissioning of the Hunters Point Power Plant in San Francisco.

San Francisco Baykeeper et al. v. Astoria Metals (N.D. CA 1999) – Clinic represented public interest and environmental organizations in Clean Water Act case regarding discharges from dry dock by industrial tenant at the Hunters Point Naval Shipyard in San Francisco, California.

In Re South Prescott Neighborhood Park, Cal. Department of Toxic Substances Control (1999) – Clinic represented Chester Street Block Club Association, a community group, in reviewing the Department of Toxic Substances Control’s approval of a remedial action plan for cleanup of toxic contamination at a neighborhood park in West Oakland, California

In Re Application of Pacific Gas and Electric Company for Authorization to Sell Certain Generating Plants and Related Assets, California Public Utilities Commission (96-11-020 and 98-01-008) – Clinic represented a community group as intervenor in two administrative proceedings before the California Public Utilities Commission regarding PG&E’s application to divest local power plants, including Hunters Point and Potrero Power Plants, as part of California’s “deregulation” of the electric utility industry.

Chester Street Block Club Assoc. v. Cal. Department of Transportation and Department of Toxic Substances Control (1998) – Clinic represented community group in U.S. EPA administrative petition filed pursuant to Title VI of the Civil Rights Act of 1964, regarding discriminatory actions by the California Department of

Toxic Substances Control and Caltrans when constructing the new Cypress freeway in West Oakland, California.

West Oakland Neighbors v. Port of Oakland (N.D. CA 1998) – Clinic represented a West Oakland community group in obtaining a consent decree settling claims under CEQA and Title VI of the Civil Rights Act regarding the Port’s expansion of marine cargo facilities.

Midway Village Residents Association v. Cal. Department of Toxic Substances Control (1998) – Clinic represented low-income residents in U.S. EPA Title VI administrative petition regarding discriminatory actions by California Department of Toxic Substances Control when addressing remediation of hazardous substances at a neighborhood park.

In Re Berkeley Asphalt and Ready Mix Plant, Berkeley Planning Commission (1998) – Clinic represented a community group in CEQA administrative proceedings before the local planning agency regarding expansion of an asphalt manufacturing facility and investigation of stormwater discharges.

Earth Island Institute, Donald May and Dave Jeffries v. Southern California Edison Company (S.D. CA 1997) – Clinic represented public interest environmental organization in monitoring a large utility company’s compliance with a consent decree, including implementation of \$15 million in mitigation measures to address Clean Water Act violations by a nuclear power facility.

Alviso Citizens in Action v. City of San Jose (San Jose Super. Ct. 1997) – Clinic represented community organization in settlement of CEQA and Title VI claims regarding expansion of a waste site.

Southeast Alliance for Environmental Justice v. City and County of San Francisco (San Francisco Super. Ct. 1997) – Clinic represented a grass-roots community group in CEQA claims against the City of San Francisco and forced a private landowner to discontinue illegal concrete crushing activities in a poor, minority neighborhood of San Francisco.

San Francisco Baykeeper v. U.S. Navy (N.D. CA 1997) – Clinic represented public interest and environmental organizations in negotiating a consent decree and settlement of Clean Water Act and RCRA claims regarding sewage and stormwater discharges from Treasure Island Naval Base in San Francisco.

San Francisco Baykeeper v. U.S. Navy (N.D. CA 1996) – Clinic represented public interest and community organizations in negotiating settlement of Clean Water Act case regarding discharges from dry dock at Naval Shipyard.

In Re Application for Certification for the San Francisco Energy Company Cogeneration Project, California Energy Commission (94-AFC -1, 1994-96) – Clinic represented community group as intervenor in administrative proceedings before California Energy Commission regarding development of a new 240 MW power plant in San Francisco.

In Re Masonite, U.S. Environmental Appeals Board, PSD Appeal (No. 94-1, Nov. 1994) – Clinic represented community group and obtained a new review of air pollution permit for industrial air emitter.

Barbara Hale

Experience and Education

Experience

Assistant General Manager of Power **October 2004 -Present**
San Francisco Public Utilities Commission, San Francisco, CA

Manage the City and County of San Francisco's Municipal Power Utility. Oversee Power Retail Services, Utilities Services, Regulatory Affairs, Infrastructure Development and Power Purchasing and Scheduling. Responsible for development of a strategic business plan for the organization, setting out priorities, objectives, schedules and policy issues for the organization. Providing leadership and strategic direction for the interconnection agreement. Oversee all inter-governmental relations, work directly with the Commission on policy and capital matters. Provide direction and leadership to a multi-discipline staff at remote and downtown locations. Provide strategic advice on energy policy matters to the GM and PUC. Manages staff responsible for developing specific energy efficiency projects and renewable and other advanced sources of electrical generation; acts as liaison for SFPUC with State and Federal agencies responsible for energy policy, such as California Public Utilities Commission, California Energy Commission, California Power Authority, Federal Energy Regulatory Commission and US Department of Energy.

Director **January 2001 -2004**
California Public Utilities Commission, San Francisco, CA

Reinvigorated the division, growing the group from two analysts to eight, to support the Commission's efforts to coordinate policy across formal dockets, identify and anticipate changing trends in regulated industries and the effects such changes may have on regulation. Directing the production of a number of staff reports and analysis, for example, publicly-distributed reports like A Core/Noncore Structure for Electricity in California (March 2004), the Energy Action Plan (May 2003), Broadband Services as a Component of Basic Telephone Service (Aug. 2002), the Natural Gas Infrastructure Report (Nov. 2001), and the Transition Plan for Telecommunications Public Purpose Programs (May 2001), and internal efforts to set priorities and allocate resources, represented by the 2004 Workplan. Represents the PUC before the Legislature and in inter-agency settings, especially energy coordination meetings where PUC activities and authority are questioned and challenged.

Administrative Law Judge II

October 1997 – January 2001

California Public Utilities Commission, San Francisco, CA

Presiding officer in formal hearings, working in support of the Commission's decision making on company- and industry-specific matters, as well as more generally-applied rulemaking matters. Presided over Pacific Gas and Electric Company application to value and divest its extensive hydroelectric generating assets and related lands. In that role, worked with Assigned Commissioner to scope the proceeding and set a rigorous schedule. Managed proceeding and participants to ensure timely and complete development of record through evidentiary hearing and written pleadings. Worked as a member of a team within the organization to meet the requests of the Assigned Commissioner and to ensure timely and effective compliance with the California Environmental Quality Act. Provided background information in response to media inquiries. Also served as mediator in multi-party rulemaking matter. Member of the team responsible for formulating the Division's policies and procedures in compliance with Legislative reform of Commission process. This assignment included planning and coordinating the Division's support staff effort to implement those reforms, and working with Commissioners to establish closed deliberation protocols. As presiding officer, timely prepares draft orders and proposed decision consistent with the law, Commission policy, and based on the record. To develop the record, instructs parties as to their rights, administers oaths, examines witnesses, rules on motions and objections, works effectively with technical staff, analyzes and evaluates the facts and law, and conducts independent legal research. Consults with the assigned Commissioner, as appropriate, and exercises independent judgment in ruling and in drafting orders and proposed decisions for the Commission's consideration. Assists Commissioners in the preparation of alternative dispositions of matters. Ably explains Commission practices, precedents, statutes and general orders to pro per litigants. Extensive experience preparing briefing materials for and organizing effective multi-party oral argument and full panel hearings before a quorum of the Commission.

Administrative Law Judge I

March 1995-October 1997

California Public Utilities Commission, San Francisco, CA

Presiding officer in formal hearings, working in support of the Commission's decision making on company- and industry-specific matters, as well as more generally-applied rulemaking matters. Primary responsibility for managing approximately twenty cases monthly of varying complexity, with a focus on telecommunications. As presiding officer, timely prepares draft orders and proposed decisions consistent with the law, Commission policy, and based on the record. To develop the record, instructs parties as to their rights, administers oaths, examines witnesses, rules on motions and objections, works effectively with technical staff, analyzes and evaluates the facts and law, and conducts independent legal research. Consults with the assigned Commissioner, as appropriate, and exercises independent judgment in ruling and in drafting orders and proposed decisions for the Commission's consideration. Assists Commissioners in the preparation of alternative dispositions of matters. Ably explains Commission practices, precedents, statutes and general orders to pro per litigants. Extensive experience preparing briefing materials for

and organizing effective multi-party oral argument and full panel hearings before a quorum of the Commission.

Advisor to President Daniel Wm. Fessler February 1992-March 1995
California Public Utilities Commission, San Francisco, CA

Primary responsibility to represent President Fessler in staff development of: alternative methods for resolving matters before the Commission; proposals for revising state regulatory structures appropriate for the changing electric industry; and negotiating a solution to the impasse between California and British Columbia, Canada, in the restructuring of the natural gas market relating to California purchases from Canada. Increased the direct participation of Commissioners in formal settings, such as more use of oral arguments and roundtable discussions before a quorum of the Commission, and all-party meetings with individual Commissioners. Advised President Fessler generally on electric and natural gas policy. Communicated on behalf of President Fessler with the Governor's Office. Prepared Legislative correspondence, press statements, and speeches. Served as media contact on significant policy issues, providing print and radio interviews. Analyzed proposed legislation, and assisted the Commission in formulating a legislative strategy and communicating Commission views to the Legislature. Represented the Commissioner as requested in day to day meetings with the general public, regulated industry representatives, sister agencies, the legislature, and other state, local, federal, and international governments and formally before conferences.

Advisor to Commissioner G. Mitchell Wilk, CEA I May 1990-Feb. 1992
California Public Utilities Commission, San Francisco, CA

Advised Commissioner Wilk on electric, natural gas, and transportation policy for the State. Served as liaison with Commission staff, utility representatives, and interested parties. Responsible for review and analysis of proposed orders and decisions before the Commission, assessing their impact on the California consumer and the health of the industry. Central participant in the Natural Gas Procurement Rulemaking, the CPCN Applications for California-Oregon Transmission Project, the Biennial Resource Plan Update Investigation, and the Electric Transmission Investigation. Helped manage proceedings and cases, coordinating between Administrative Law judges working on related cases. Prepared correspondence, press statements, and speeches. Served as media contact on significant policy issues, providing print and radio interviews. Analyzed proposed legislation, and assisted the Commission in formulating a legislative strategy and communicating Commission views to the Legislature. Represented the Commissioner as requested in day to day meetings with the general public, regulated industry representatives, sister agencies, the legislature, and other state, local, and federal governments and formally before conferences.

Regulatory Analyst I, II, Division of Ratepayer Advocate June 1988-May 1990, California Public Utilities Commission, San Francisco, CA

Applied economic theory and statistical analyses to regulatory problems facing the alternative generation sector of the electric industry. Developed and testified on positions

Barbara Hale

for presentation before quasi-judicial, administrative law proceedings. Provided and evaluated informal solutions to regulatory problems through group discussions internally and with concerned industry representatives. Contributed to the development of alternative generation policy for the state through informal brainstorming sessions with Commission staff.

Research Assistant/Junior Analyst
Berkeley Planning Associates, Berkeley, CA

May 1987-1988

Conducted statistical analyses. Utilized data to suggest policy recommendations, develop alternatives, and judge the efficiency, appropriateness and effectiveness of programs and regulations applied to social services. Recommended study design changes where appropriate. Aided in the preparation of proposals for potential contracts.

Education

San Francisco State University, BA, Economics, cum laude. Special recognition for high achievement with the Department Honors Award, 1986. Extensive graduate course work in Applied Economics.

Randall D. Smith

Education

B.S. Plant and Soil Biology, UNIVERSITY OF CALIFORNIA, Berkeley, CA, 1987

Professional History

Regulatory/Utility Specialist, SAN FRANCISCO PUBLIC UTILITIES COMMISSION, San Francisco, CA, 2000 – Present

- Responsibilities include ensuring compliance of SFPUC projects and facilities with federal, state and local environmental laws and regulations, including RCRA, the Clean Water Act, CEQA, the Porter-Cologne Water Quality Act, and the California Health and Safety Code. Tasks include contact and coordination with regulatory oversight agencies to obtain authorizations and permits for SFPUC activities.
- Compilation and analysis of technical environmental data for SFPUC projects. Review and evaluation of proposed environmental legislation that may affect SFPUC operations and property. Interpretation of environmental laws and requirements for SFPUC personnel.

Project Manager/Biologist, QUESTA ENGINEERING CORPORATION, Point Richmond, CA, 1991-2000

- Project management of environmental investigations and studies, including proposal and budget development, cost-tracking and control of project costs. Management of technical staff and primary point of contact for clients.
- Supervision and coordination of a wide range of environmental investigative activities. These include: environmental site assessments, remedial investigations, feasibility studies, water resource/water quality projects, wetland assessments, wastewater characterizations/studies, environmental impact report (EIR) documentation, and geotechnical investigations.
- Project regulatory management, including coordination and negotiation with RWQCB, DTSC, USACE, DFG, BCDC and other federal, state and local oversight agencies. Development of QA/QC protocols and health & safety programs to meet oversight agency requirements and client objectives.

Environmental Scientist/Staff Geologist, WESTERN GEOLOGIC RESOURCES, INC., Novato, CA, 1989 - 91

- Prepared environmental workplans, coordinated and conducted subsurface investigations to determine soil and groundwater contamination. Supervised monitoring well installations, soil excavations, site remediation and hazardous

waste disposal. Performed research, permitting, and preparation of technical reports for Haz-Mat projects.

Aerial Photogrammetrist/Consultant, PACIFIC AERIAL SURVEYS, Oakland, CA, 1987 - 89

- Organized, compiled and interpreted data for mapping projects of urban and natural resource areas, using photogrammetric methodology. Conducted land use research using aerial photo interpretation for sites throughout the greater Bay Area.

Representative Assignments

Regulatory Specialist, SFPUC, San Francisco, CA, 2000—Present

- ***Baylands Recovery Project, Menlo Park, CA:*** Supervised completion of Phase 1 RAP (RCRA) for on-going three-phased remediation of 41-acre SF-PUC right-of-way formerly used as a skeet shooting range. Acted as primary contact for project with RWQCB (lead agency), USACE, USFW and other interested environmental agencies. Obtained waste treatment variance from US-EPA for disposal of heavy metals from lead shot associated with PAHs from clay pigeon debris. Coordinated ecological and human health risk assessments, groundwater characterization program and biological monitoring for excavation/fieldwork. Currently in process of developing remedial alternatives with consultants and reviewing Phase 2 RAP for next phase of work. Site restoration expected to be completed by 2004.
- ***Hazardous Materials Business Plans, Water Pollution Control Division:*** Managed As-Needed consultant and project to produce/update Haz-mat Business Plans for WPC treatment plants and pump stations (thirteen in all). Acted as liaison with CUPA agencies for documenting SFPUC compliance and obtaining extensions for submittal of HMBPs, avoiding potential for fines or other penalties.
- ***BAAQMD Stand-by Engine Regulations:*** Participated in discussions with Bay Area Air Quality Management District staff in regard to proposed regulations restricting use of stand-by engines. Due to the power crisis uncertainty of 2001, the proposed regulations were likely to greatly restrict operations at PUC facilities in times of power outages. Successfully lobbied (along with other POTW groups) for changes more favorable to water supply and treatment agencies. Authored memorandum outlining new BAAQMD registration program requirements for distribution to SFPUC managers and engineering staff.

Project Manager/Supervisor, QUESTA ENGINEERING CORPORATION, Point Richmond, CA, 1991-2000

Hazardous Materials Investigations and Remediation Projects

- ***Hercules Powder Plant, Hercules, CA:*** Performed subsurface site characterization of former explosives manufacturing facility (Superfund site); project also included investigations of industrial buildings and structures for hazardous materials. Prepared feasibility study for soil and groundwater remediation which included preservation of affected wetlands. Coordinated implementation of remedial action plan, which involved management of on-site personnel and subcontractors in demolition of facility structures and excavating, screening, treatment and disposal of contaminated soil.
- ***Gelsar Inc. Properties, Hercules, CA:*** Supervised remedial investigation of nitroaromatic contamination of riparian corridor in coordination with archaeological exploration to identify and preserve historical Native American artifacts on site. Coordinated investigation with contractors and State regulators. Prepared evaluation and feasibility study for soil remediation and site preservation.
- ***Golden Gate National Recreation Area, San Francisco, CA:*** Oversaw investigation of Golden Gate National Recreational Area (GGNRA) Bay beaches and headlands for lead contamination. Project tasks included characterization of stormwater runoff pathways, and sampling of soils, surface water and groundwater. Historical research and site use analyses were conducted to determine contaminant sources.
- ***Ross Valley Sanitation District, Larkspur, CA:*** Conducted an investigative study of a former wastewater treatment plant slated for redevelopment. Planned and supervised soil and groundwater remedial investigation to be performed concurrently with demolition of site facilities.
- ***Soil/Groundwater Investigations and Remediations, Northern CA:*** Planned and supervised soil/groundwater investigations and remediations for sites associated with leaking underground fuel tank (LUFT) projects throughout Northern California. Conducted exploratory borings, installed wells and arranged sampling programs. Directed numerous soil excavations and developed on-site remediations.
- ***Phase I Environmental Site Assessments, Northern CA:*** Conducted numerous Phase I Environmental Site Assessments of commercial and industrial properties in the Greater Bay Area. These included characterizations of a former wastewater treatment plant, several local shipyards, computer manufacturing facilities, and a BART station site.

EIR/EIS Projects

- ***North Livermore Master Plan, Livermore, CA:*** Investigated and evaluated soils, stormwater runoff and groundwater issues pertaining to agricultural uses and hydrology. Determined suitability of large parcels for potential development while developing solutions to preserve unique Birdsbeak habitat.
- ***Highway 101 Corridor, Redwood City, CA:*** Researched and analyzed commercial and industrial properties adjacent to Highway 101 for hazardous materials, surface and groundwater quality, and stormwater drainage. Evaluated impacts

and determined mitigations for identified issues relating to redevelopment of the area.

- ***Cowell Ranch, Brentwood, CA:*** Evaluated soil and water quality impacts on proposed residential development project near Marsh Creek due to abandoned mercury mines upstream. Determined corrective measures to successfully mitigate hazardous conditions.

Wetland Assessments/water resources

- ***Wetlands Evaluations and Characterizations, Northern CA:*** Conducted evaluations and characterizations of numerous wetlands in Northern California in coordination with US Army Corps of Engineers and other oversight agencies.
- ***Water Resources Projects:*** Assessment of storm water runoff and application of water quality standards and controls to comply with Federal Clean Water Act. Includes NPDES permits and Storm Water Management Plans for various industrial and construction projects.
- ***Santa Rosa Wastewater Project, Sonoma County, CA:*** Assessed numerous wetland areas in Sonoma County for wastewater irrigation project. Performed surveys and classifications over a 6-month period to determine the most suitable locations for placement of treated wastewater reservoirs. Identified potential sites for creation of new wetlands. Monitored and mapped surface water/storm water runoff.
- ***Hercules Properties Inc., Hercules, CA:*** Investigated and evaluated San Francisco Bay wetlands for arsenic and lead contamination. Produced study that compared past historical uses with current conditions to clarify source of contaminants. Developed remediation plan to remove contamination, yet preserve and enhance wetlands.
- ***Hercules Inc., Hercules, CA:*** Investigated residual explosives contamination of San Pablo Bay wetlands in coordination with DTSC staff. Designed and implemented successful remedial action plan and 5-year monitoring program to mitigate contamination and meet US Army Corps of Engineers and Department of Fish & Game objectives.
- ***Islais Creek, San Francisco, CA:*** Performed study and implemented program to reclaim salt marsh grass habitat in San Francisco from former industrial use. Worked with local community volunteers (Friends of Islais Creek) and City regulators to restore area.

Laboratory

- Supervised and performed geotechnical soils testing in laboratory environment according to ASTM standards, including particle-size analysis, Atterberg Limits, and compaction testing.
- Directed use of X-Ray Fluorescence (XRF) technology in laboratory and field settings to characterize concentrations of metals in soil using Spectrase 9000 Analyzer. Established QA/QC methodology with DTSC.

Registrations and Certifications

Department of Labor 29CFR Part 1910.120 Training

(OSHA 40-hour/Current 8-hour refresher/8-hour supervisory training)

Nuclear Soil Density Compaction Testing

(CN MC-3 Portaprobe training).

Steven B. Brock, PE

Supervising Mechanical Engineer

Education

B.S. Aerospace Engineering, 1966, University of Arizona

M.S. Aeronautical and Astronautical Engineering, 1967, Stanford University

MBA Management, 1974, Santa Clara University

Professional Registration

Mechanical Engineer, California

Key Qualifications

Steve Brock has over 35 years of engineering and management experience covering a broad spectrum of responsibilities which include project and design engineering on large and small combustion systems and power plants.

Specialized activities and experience includes feasibility studies, P&ID preparation, heat and mass balances, project scheduling and management, equipment selection, specification preparation, permitting support, construction support, and commissioning support. Steve also has significant experience in the engineering of existing power and utilities systems including operations audits, development of process "as-builts", and modification of existing systems.

Areas of specialized experience include: Cogeneration Facilities and Power Plants; Thermal Processes; Combustion Systems and Burners; and Pollution Control Systems.

Recent projects Steve has served as Project Manager for include:

- San Francisco Electric Reliability Project: Provided preliminary engineering services for development and permitting of two simple cycle plants. One consisted of three LM6000 turbine generators with SCRs and inlet chilling located in San Francisco. One consisted of a single LM6000 combustion turbine generator with SCR and inlet chilling located at the San Francisco International Airport. The three unit site will also incorporate a recycle water treatment plant to produce recycle water for the plant and City. Part of team preparing AFC for submittal to the CEC. Other team members were CH2M Hill, Sierra Research, and De Young Environmental Consulting.
- Modesto Irrigation District Ripon Generation Station: Researched technology, prepared specification, and evaluated bids utilizing competing technologies for a water treatment system that included a Zero Liquid Discharge system. The Ripon Generation Station utilizes two LM6000 gas turbine generators in a peaking application. The water treatment system is required to operate in that environment with minimal staffing and provide an economic, reliable long-term solution to wastewater disposal.
- Silicon Valley Power's Donald Von Raesfeld Power Plant (formerly known as Pico Power Plant) Project: Provided preliminary engineering services for development of a combined cycle plant consisting of two LM6000 combustion turbine generators with a condensing steam turbine in Santa Clara. Performed cycle and gas turbine evaluation for selection of gas turbine models. Part of team preparing AFC for submittal to the CEC. Other team members were Foster Wheeler Environmental and Argonaut consulting. Effort included design of a three-breaker switchyard to interconnect with an existing 115 kV line.
- SMUD Cosumnes Power Plant Owner's Engineer: Provided preliminary engineering services for the combined cycle 1,000 MW combined cycle power plant to be located outside Sacramento, CA. The project will use GE 7FA's for two power islands each consisting of two gas turbines and

a high pressure reheat steam turbine. Steve was responsible for coordinating all engineering support for the CEC (California Energy Commission) and AFC (Application for Certification). This included preliminary engineering for the application, support of CH2M Hill in developing the environmental aspects of the project, and responding to CEC Data Requests. Key issues were water usage and wastewater disposal.

- NCPA (Northern California Power Agency) Siting Study and Power Generation Project: Performed a study that evaluated five different sites for the potential siting of a 120 MW combined cycle power plant. Site evaluation included defining any “fatal flaws”, assessing biological considerations, defining all utility linears, and identifying any local situation relevant to power plant siting. All biological and permitting investigations were performed by WZI Inc. under contract to PB Power.

Additional projects Steve has served in a Project Engineer capacity include:

- Turlock Irrigation Distinct Siting and Cycle Study: Prepared study of six sites for potential development of a 240 MW combined cycle plant. Investigation included all aspects of project development with particular attention to biota, utility linears, site impact on surrounding area, and potential CEC areas of concern. Performed life cycle analysis for multiple combined cycle arrangements under various loading conditions.
- Kauai Power Partners: Provided engineering services for permit application for multiple sites on Kauai for a 25 MW LM2500 STIG application utilizing distillate oil as the fuel. Effort included site visits to ascertain the potential site impacts on the surrounding areas. Permit application was for three sites and after permitted, local community would select final site.
- United Golden Gate Power Project: Engineering services for AFC for 570 MW combined cycle plant at San Francisco International Airport. Project included two GE7FAs, one LM6000, and one high pressure reheat steam turbine. Exhaustive water source survey resulted in selection of ACC as the best technology for the site. First phase, consisting of a single simple cycle LM6000, was permitted under expedited program to alleviate California’s power shortage.
- Victoria Hospital Arbitration, Australia: Provided expert witness input in support of Command Energy (the operator) in a successful arbitration regarding the performance and reliability of seven Rolls Royce Cheng Cycle units installed at six different locations. Operation was 16 hours per weekday and all six sites were operated remotely.
- Genetics Institute: Project Engineer and Lead Mechanical Engineer for design of a 9.8 MW cogeneration facility and chiller plant expansion for Genetics Institute, a pharmaceutical production complex in Andover, Massachusetts. First phase utilized a Solar Taurus 60 gas turbine with heat recovery boiler and incorporating the first hot zone SCONOX emission reduction system. Dual fuel unit used natural gas as primary fuel with No. 2 oil as emergency backup.
- Colmac Energy: Performed cycle and cost estimation for multiple combined cycle applications (over 30 different combinations) for Colmac Energy to supply power and voltage support to Imperial Irrigation District.
- Wallingford Energy Project: Supervising Mechanical Engineer for a power plant comprised of five LM6000PC Sprint simple cycle units in Connecticut that were located in old decommissioned power facility. Noise mitigation included 50-foot high sound wall. Low single digit emission requirements achieved with SCR and CO catalysts.
- Supervising Mechanical Engineer for a utility plant upgrade at University of California at San Francisco which included two gas turbines with HRSGs, steam turbine, three emergency generators, and ancillary equipment.
- Preliminary engineering on numerous power plants with aeroderivative and frame gas turbines, steam turbines, and extensive water treatment. Plant sizes ranged from 40 to 150 MW output.

Steven B. Brock

- Project Manager/Engineer for a 5.5 MW cogeneration plant, designed by International Power technology (IPT), which utilizes a steam injected gas turbine (Cheng cycle) with a HRSG to supply power and steam to SRI International. Steve also provided engineering services on a project for a similar facility designed for Sunkist Growers which utilized R/O and demineralizer water treatment. On both of these efforts, Steve provided plant engineering support to both IPT and the project owner for all phases of operation.
- Project Engineer for an 18 MW biomass power plant utilizing logs and forest slash fed into a pin grate boiler with two rebuilt steam turbines for Pacific Energy at Oroville, California.
- Lead Mechanical Engineer for an 18 MW lignite fired grass roots circulating fluid bed power plant at Lone, California.

Supervising Engineer for several engineering efforts at municipal wastewater treatment facilities including design of multiple hearth furnaces and auxiliary systems for sewage incineration or calcining.

Steven De Young

De Young Environmental Consulting

Steve De Young has over 24 years experience in managing interdisciplinary environmental projects and participation in environmental investigation, permitting, regulatory reviews and mitigation activities. Mr. De Young has a strong working knowledge of environmental laws and regulations, regulatory review processes, and compliance processes for a broad range of environmental issues. He also has extensive experience in the coordination and integration of varied environmental and engineering disciplines in preparing compliance support documents and procedures and liaison between federal, state, and local agencies, applicants, and the public.

PROFESSIONAL HISTORY

Independent Consultant – De Young Environmental
Consulting Environmental Project Manager
September 2000 to present.

Bechtel Group/Bechtel Environmental, Inc.
Project Manager – Bechtel Corporate Environmental
Affairs – March 1993 to August 2000

Lawrence Livermore National Laboratory
Group Leader – August 1991 to February 1993

Bechtel Group/Bechtel Environmental, Inc.
Group Leader – October 1981 to July 1991

PROFESSIONAL EXPERIENCE

Calpine Corporation – Since 1999 Mr. De Young has been working with the Calpine Corporation as the Environmental Project Manager for several natural gas-fired power plants in California. These include the following:

- Metcalf Energy Center (600 MW combined-cycle plant, licensed 2001)
- East Altamont Energy Center (1100 MW combined-cycle plant, licensed 2003)
- Los Esteros Critical Energy Facility Phase 1 (180 MW simple-cycle peaking plant, licensed 2002)
- Los Esteros Critical Energy Facility Phase 1 relicense and Phase 2 combined-cycle conversion (320 MW combined-cycle plant, licensed 2005)
- Russell City Energy Center (600 MW combined-cycle plant, licensed 2002)

Steven De Young

- San Joaquin Valley Energy Center (1100 MW combined-cycle plant, licensed 2004)

Mr. De Young's responsibilities included obtaining the California Energy Commission licenses for the projects and obtaining permits from other regulatory agencies such as the U.S. Fish and Wildlife Service, Western Area Power Authority, California Department of Fish and Game, State Lands Commission, U.S. Bureau of Reclamation and city planning agencies. Mr. De Young was the primary project interface with CEC staff and management and representatives of other regulatory agencies.

The Metcalf project was arguably the most disputed project ever licensed by the California Energy Commission (CEC). Mr. De Young and his team prepared over six thousand pages of testimony that ultimately led to the approval of the project despite significant opposition. The project was permitted using the CEC override authority and has since withstood lawsuits brought before federal, state and local courts.

Calpine Corporation - Compliance Mr. De young has also assisted Calpine Corporation in compliance activities associated with projects licensed before the California Energy Commission. His activities included the preparation of several amendments to the project license for the Metcalf Energy Center, preparation of pre-construction documents and approvals for the Metcalf and Los Esteros projects, construction compliance support for the Metcalf and Los Esteros projects, and permit maintenance (i.e., ensuring that permits remained valid for projects placed on hold) for the East Altamont and Russell City projects.

Modesto Irrigation District – Mr. De Young managed the permitting of the Modesto Irrigation District Electric Generation Station, a 95 MW simple-cycle power plant located in Ripon, CA. His responsibilities included: managing the preparation of the application, providing project coordination with regulatory agencies such as the California Energy Commission and the Central Valley Regional Water Quality Control Board, and resolving issues/concerns of the agencies.

City and County of San Francisco – Mr. De Young is currently the environmental project manager for two projects for the City and County of San Francisco. One project is a 145 MW peaking facility under review by the California Energy Commission. The second project is a 45 MW peaking facility to be located at the San Francisco International Airport. This project is being permitted by the San Francisco Planning Department.

Steven De Young

Bechtel Corporation – In his nearly 17 years with the Bechtel Corporation, Mr. De Young had a varied career in environmental permitting and compliance. He successfully completed various nuclear power plant licensing activities including preparation of Preliminary and Final Safety Analysis Reports. During Mr. De Young's six year assignment with Bechtel Power, he performed work assignments for the Hope Creek Nuclear Generating Station, Limerick Nuclear Power Plant, and Diablo Canyon. In addition to his nuclear licensing work, Mr. De Young was also involved in the permitting of a number of cogeneration facilities. On the Greenleaf Power cogeneration facility, Mr. De Young prepared a comprehensive permitting acquisition plan and schedule, prepared permit applications for submittal to regulatory agencies, and followed the permit applications through the various agency review processes. In addition, he prepared Fuel Use Act Exemption Petitions and Federal Energy Regulatory Commission (FERC) Certifications for the Basic American Foods and Greenleaf Power cogeneration facilities, and assisted in the preparation of the Basic American Foods Application for Certification that was submitted to the California Energy Commission. A summary of Mr. De Young's project management activities at Bechtel include:

- Preparation of comprehensive RCRA Part B permit applications, interim status documents, and pond closure plans for the FMC Pocatello Project.
- Manager of Regulatory Information and Auditing with Bechtel's Corporate Environmental Affairs organization. He was responsible for tracking changes in environmental laws and regulations, assessing potential impacts of these changes on Bechtel projects and clients, and issuing guidance on the changes in the form of compliance alerts and training "tool kits".
- Manager of the Bechtel Environmental, Inc. San Francisco Regulatory Analysis Group. Mr. De Young was responsible for the supervision, technical accuracy and overall development of a group of seven regulatory analysts. His responsibilities in this position included tracking and analyzing significant developments in federal and state environmental laws and regulations, assessing potential impacts on Bechtel's clients, developing strategies for successful environmental compliance, and technical oversight of the work products prepared by the regulatory analysts.

Lawrence Livermore National Laboratory – In his last position at the Lawrence Livermore National Laboratory (LLNL), Mr. De Young was Group Leader of the LLNL Environmental Legislation and Regulation Analysis Group. He was responsible for managing a group of LLNL and contractor technical personnel involved in the identification and analysis of emerging environmental laws and regulations at the

Steven De Young

federal, state, and local levels. Significant activities included the development of guidance documents and procedures designed to ensure consistent interpretation and implementation of regulatory requirements throughout the Laboratory, preparation of comment letters to regulatory bodies, and presentations to LLNL management on the potential impacts of new environmental requirements on Laboratory programs.

EDUCATION

B.A., Environmental Sciences
California State University, Fresno

Barry R. Flynn, P.E.

PRINCIPAL

Professional Energy Experience

Flynn Resource Consultants Inc., California

1987 - Present

Principal

- Provided strategic advice in the development of a power marketing subsidiary for a major independent power producer.
- Investigated the results of competition on the electric utility industry research funding, resulting in an Electric Power Research Institute (EPRI) report titled Competition in the Electric Utility Industry: Current Trends and Perspectives.
- On behalf of EPRI, formulated a set of principals to guide a group of municipal utilities in their efforts to develop a Public Power Fuel Cell Demonstration Project in the City of Palo Alto, California.
- On behalf of EPRI, developed methods to overcome potential limitations to public sector participation in a public/private venture.
- Provided an assessment for the CEC on transmission planning, corridor and siting, and permitting issues as a contractor for the CEC.
- Served as an Alternate Committee member on the founding Trust Advisory Committee for the ISO and Power Exchange.
- Participated in some of the ISO definition teams, including those concerning the Transmission Access Fee, Congestion Management and Pricing, Transmission and Ancillary Services Rules and Protocols, Transmission Congestion Contracts.
- Advocated client interests in various ISO stakeholder groups and before the ISO Board of Governors and its Committees.
- Served as part of a team which negotiated the first network transmission agreement in the Pacific Gas and Electric Company (PG&E) service territory.
- Provided testimony before the CPUC on the need for the Jefferson-Martin 230 kV transmission line and serves as member of the San Francisco Peninsula Long-Term Phase 2 Transmission Study Committee.
- Advocated clients' interests in a number of transmission planning forums dealing with reduction of RMR requirements, expansion of the grid and deliverability of generation for resource adequacy purposes.

Applied Power Technology, Menlo Park, CA

1984 - 1987

President

- Managed a group of professionals while establishing the company in the alternative energy field.
- In fiscal year 1985, achieved the company's first profitable year since its founding in 1982 through the sale of development rights to a \$30 million, 18 megawatt, biomass-fueled power plant, located in Oroville, California.

City of Santa Clara, California 1974 - 1984

Director of Electric Utility

- Effectively directed the municipal utility in reducing the rate of increase in retail electricity rates through aggressive management of bulk power supply contracts with the Western Area Power Administration (WAPA) and Pacific Gas and Electric Company (PG&E), and through development of the utility's own economical generation resources.
- Served on a number of joint action agency governing boards and management committees that developed major geothermal and hydroelectric projects and purchased part of an existing coal project.
- Supervised the legal and technical efforts in federal court actions which resulted in an increase in the City of Santa Clara's allocation of federal preference power.
- Successfully managed the negotiation of an Interconnection Agreement with PG&E which allowed the Santa Clara to wheel power over PG&E's transmission facilities and provided for reserve capacity, bulk power purchases, excess power sales, and real-time scheduling of power deliveries.
- Conceived, analyzed and negotiated steam sales contracts for a 6 megawatt cogeneration project.
- Negotiated the purchase of a 10 percent working interest in a 1760 acre gas prospect and natural gas transportation agreement.

Pacific Gas and Electric Company, San Francisco, CA 1966 - 1974

Transmission Planning Engineer

- As Senior Transmission Planning Engineer for Pacific Gas and Electric Company, supervised a staff of engineers that planned the orderly development of the high voltage transmission system for four central divisions with an electric load of approximately 20 billion kilowatt hours.

Education

University of Santa Clara, Santa Clara, California, 1974

Master of Science in Electrical Engineering

University of California at Berkeley, Berkeley, California, 1966

Bachelor of Science in Electrical Engineering

Industry Representation

Founding Board of Directors of the Fuel Cell Users Group

Selected to serve successively on the Fuel Cell Program Committee, the Advanced Conversion and Energy Storage (ACAS) Task Force, and the Energy Management and Utilization (EMU) Division Committees of EPRI.

Professional Registration

Registered Professional Electrical Engineer, State of California (1969)

Gary S. Rubenstein

Air Quality

Education

1973, B.S., Engineering, California Institute of Technology

Professional Experience

August 1981 - Present Senior Partner
Sierra Research

Relevant Experience

As one of the founding partners of Sierra Research, responsibilities include project management, and technical and strategy analysis in all aspects of air quality planning and strategy development; emission control system design and evaluation; rulemaking development and analysis; vehicle inspection and maintenance program design and analysis; and automotive emission control design, from the initial design of control systems to the development of methods to assess their performance in customer service. As the Partner responsible for Sierra Research's activities related to stationary sources, he has supervised the preparation of control technology assessments, environmental impact reports and permit applications for numerous industrial projects, including over 8000 megawatts of electrical generating capacity, in the Western United States.

Representative Projects

Mr. Rubenstein has worked on the following key projects while with Sierra: preparation of the 1986 ozone and carbon monoxide nonattainment plans for Kern County, California; preparation of the air quality portions of the EIR/EIS for the controversial expansion of operations at the South Lake Tahoe Airport; preparation and defense of the air quality permit applications for the ACE project, the first utility-scale (90 MW) coal-fired power plant built in California; development of the CALIMFAC and EMFAC99 models, California's motor vehicle emission factor models; preparation and defense of analyses of the air quality impacts of the proposed merger between Southern California Edison and San Diego Gas & Electric Company, which would have created the country's second largest electric utility; and preparation and defense of analyses of the air quality impacts of the proposed Eagle Mountain Landfill which, when constructed, will be the largest landfill in the United States.

Mr. Rubenstein has presented testimony and served as a technical expert witness before numerous state and local regulatory agencies, including the U.S. Environmental Protection Agency, California State Legislative Committees, the California Air Resources Board, the California Energy Commission, the California Public Utilities Commission, the South Coast and Bay Area Air Quality Management Districts, several rural California air pollution control districts, the Hawaii Department of Health, and the Alabama Department of Environmental

Management. Mr. Rubenstein has also served as a technical expert on behalf of the California Attorney General and Alaska Department of Law.

Additional project experience includes the conduct and supervision of projects related to the development of emissions inventories for air quality planning purposes; the assessment of air quality trends; preparation of State Implementation Plans; the development and exercise of motor vehicle emission factor models; the analysis of motor vehicle emission data; and the preparation of legislative and regulatory analyses.

Prior Experience

June 1979 - July 1981

Deputy Executive Officer
California Air Resources Board

Responsibilities included policy management and oversight of the technical work of ARB divisions employing over 200 professional engineers and specialists; final review of technical reports and correspondence prepared by all ARB divisions prior to publication, covering such diverse areas as motor vehicle emission standards and test procedures, motor vehicle inspection and maintenance, and air pollution control techniques for sources such as oil refineries, power plants, gasoline service stations and dry cleaners; review of program budget and planning efforts of all technical divisions at ARB; policy-level negotiations with officials from other government agencies and private industry regarding technical, legal, and legislative issues before the Board; representing the California Air Resources Board in public meetings and hearings before the California State Legislature, the California Energy Commission, the California Public Utilities Commission, the Environmental Protection Agency, numerous local government agencies, and the news media on a broad range of technical and policy issues; and assisting in the supervision of over 500 full-time employees through the use of standard principles of personnel management and motivation, organization, and problem solving.

July 1978 - July 1979

Chief, Energy Project Evaluation Branch
Stationary Source Control Division
California Air Resources Board

Responsibilities included supervision of ten professional engineers and specialists, including the use of personnel management and motivation techniques; preparation of a major overhaul of ARB's industrial source siting policy; conduct of negotiations with local officials and project proponents on requirements and conditions for siting such diverse projects as offshore oil production platforms, coal-fired power plants, marine terminal facilities, and almond-hull burning boilers.

During this period, Mr. Rubenstein was responsible for the successful negotiation of California's first air pollution permit agreements governing a liquefied natural gas terminal, coal-fired power plant, and several offshore oil production facilities.

Gary S. Rubenstein

October 1973 -
July 1978

Staff Engineer
Vehicle Emissions Control Division
California Air Resources Board

Responsibilities included design and execution of test programs to evaluate the deterioration of emissions on new and low-mileage vehicles; detailed analysis of the effect of California emission standards on model availability and fuel economy; analysis of proposed federal emission control regulations and California legislation; evaluation of the cost-effectiveness of vehicle emission control strategies; evaluation of vehicle inspection and maintenance programs, and preparation of associated legislation, regulations and budgets; and preparation of detailed legal and technical regulations regarding all aspects of motor vehicle pollution control. Further duties included preparation and presentation of testimony before the California Legislature and the U.S. Environmental Protection Agency; preparation of division and project budgets; and creation and supervision of the Special Projects Section, a small group of highly trained and motivated individuals responsible for policy proposals and support in both technical and administrative areas (May 1976 to July 1978).

Certifications

Qualified Environmental Professional, Institute of Professional Environmental Practice, 1994

Professional Associations

Air & Waste Management Association
Society of Automotive Engineers.

Mark Bastasch, P.E., INCE

Noise

Education

M.S., Environmental Engineering

B.S. (cum laude), Environmental Engineering

Professional Registrations

- Institute of Noise Control Engineers (INCE)
- Professional Acoustical Engineer: Oregon
- Professional Civil & Environmental Engineer: Oregon
- 40-hour HAZWOPER Certified
- 8-hour HAZWOPER Site Supervisor Certification
- 12-hour Site Safety Coordinator Certification

Distinguishing Qualifications

- Experience includes evaluation and measurements of existing noise levels; feasibility, mitigation design, and fatal flaw siting analysis of power facilities.
- Has conducted many noise studies in accordance with California Energy Commission requirements including both oral and written expert witness testimony.
- Has prepared acoustical analysis or expert testimony for more than 1,500 megawatts (MW) from wind generation facilities and 6,000 MWs from gas fired facilities

Relevant Experience

Mr. Bastasch is a registered acoustical engineer with more than 7 years experience conducting acoustical studies for industrial and municipal clients. Mr. Bastasch's acoustical experience includes preliminary siting studies, regulatory development and assessments, ambient noise measurements, industrial measurements for model development and compliance purposes, mitigation analysis, and modeling of industrial and transportation noise. Specific project experience includes:

Relevant Experience

Walnut Energy Center Turlock Irrigation District (2002 to present). Provided noise support in preparation of the AFC for submittal to the CEC. Tasks include evaluation of applicable regulations, identifying sensitive receptors, background noise measurements, acoustical modeling and determination of mitigation measures. Provided additional support as owners engineer including preparation of acoustical specifications for various equipment, enclosures and barriers.

Los Esteros Critical Energy Facility, Calpine (2001). Provided noise support in preparation of the AFC for submittal to the CEC. Tasks include evaluation of applicable regulations, identifying sensitive receptors, background and equipment noise measurements, mitigation

recommendations. Conducted operational compliance monitoring in accordance with Conditions of Certification.

San Francisco Electric Reliability Project (SFERP), City and County of San Francisco (2003 to present). Provided noise support for document preparation for the SFPUC for the application for certification (AFC) for a proposed power plant in City of San Francisco

San Joaquin Valley Energy Center, Calpine (2001 to 2004). Provided noise support in preparation of the AFC for submittal to the CEC. Tasks include evaluation of applicable regulations, identifying sensitive receptors, preparation of expert witness testimony that prevailed over CEC's Staff recommendations.

East Altamont Energy Center, Calpine (2001 to 2003). Provided noise support in preparation of the AFC for submittal to the CEC. Tasks include evaluation of applicable regulations, identifying sensitive receptors, numerous acoustical analysis.

Application for Certification, Salton Sea Unit 6 Geothermal Power Plant, Mid-American Energy Holding Company, Imperial County, California (2002 to 2004). Provided noise support for the licensing of the 185-MW geothermal power plant.

MID Electric Generation Station (MEGS), Modesto Irrigation District (2004) Provided noise support for the preparation of the SPPE.

Metcalf Energy Center, San Jose, California (1998 to present). Provided noise support for a 600-MW power plant. Tasks include the following: evaluating and measuring background noise levels; modeling and comparison of expected noise levels with the City of San Jose, County of Santa Clara standards, and the California Energy Commission's (CEC) 5 dBA over background guideline; recommendations to acquire additional property; preparing Application for Certification submitted to the CEC; regulatory negotiation; and review of Conditions of Certification, testimony at public hearings, and CEC evidentiary hearings, which included detailed cross-examination. Successful negotiations saved the client more than \$5 million in capital expenditures.

Delta Energy Center Project in Contra Costa County, California for Calpine/Bechtel, San Francisco, California (1998 to 2000). Provided noise support for a 700+ MW gas-fired power plant licensed by the California Energy Commission.

Cosumnes Power Plant, SMUD (2001 to 2003). Provided noise support in preparation of the AFC for submittal to the CEC. Tasks include evaluation of applicable regulations, identifying sensitive receptors, background noise measurements, expert witness testimony.

Roseville Energy Park, Roseville Electric, Roseville, California (2005). Assisted in the evaluation of noise impacts from the Roseville Energy Park, a natural gas-fired combined cycle power plant.

Confidential Southern California Power Project (2004 to present). Assisted in the evaluation of noise impacts for the application for certification (AFC) for a proposed power plant.

Loren Bloomberg, P.E.

Traffic and Transportation

Education

M.S., Civil Engineering

B.S., Systems Engineering

Professional Registrations

Professional Engineer (Traffic): California

Relevant Experience

Mr. Bloomberg has led or played a key role in numerous large-scale planning and operations analyses. He has conducted studies and developed plans for local areas, corridors, and entire regions. Mr. Bloomberg's technical expertise is in simulation modeling and traffic operations, with a particular focus on conceptual engineering and traffic analysis. He is often called upon as a technical expert for CH2M HILL's modeling projects, and is known for his ability to complete traffic analyses accurately and efficiently, while meeting client requirements. Mr. Bloomberg is a member of the Highway Capacity Committee of the Transportation Research Board, the international group of 30 professionals charged with developing and maintaining the *Highway Capacity Manual*.

Representative Projects

Walnut Energy Center Traffic Control and Implementation Plan (TCIP), Turlock Irrigation District (2004 to 2005). Developed the traffic control plan for the utility (potable and recycled water) lines for the Walnut Energy Center in Turlock. The TCIP addressed the mitigation of traffic impacts to the existing transportation facilities to satisfy the requirements of the CEC Conditions of Certification.

Metcalf Energy Center, Calpine Corp., San Jose (2001 to 2002). Task lead for traffic control for this fast-track effort to design and construct linear facilities (recycled water, sewer, and potable water) to support a new energy center. Developed plans to support two pipeline alignments through 6 to 10 miles of urban streets. Worked with local agencies to develop a transportation management plan to support agency requirements and maintain construction schedules.

San Francisco Electric Reliability Project, San Francisco Public Utilities Commission (2004 to 2005). Task lead for the traffic and transportation section of the AFC. Traffic impacts focused on construction activities.

Proponent's Environmental Assessment (PEA), San Mateo County (2002 to 2004). Task lead for the transportation analysis to support the PEA and associated EIR for a major utility company. The project will involve trenching and overhead construction throughout San Mateo County, with potential impacts to freeways, ramps, surface streets, and BART. Led the transportation analysis (including evaluation, assessment of impacts, and development of mitigation measures)

and was primary author for the transportation section of the environmental document. Leading the development of transportation management plans for the multiple jurisdictions.

Infrastructure Improvement Projects and Dutton Meadows EIR, Santa Rosa (2004). Traffic task lead for developing project- and program-level EIRs to support planned development in Santa Rosa. Developed traffic/transportation sections of the CEQA documents, tiering off previous environmental documents and technical studies.

Owens Lake Dust Control Project EIR, Southern California (2001). Traffic task lead for the assessment of the impacts of a major hauling operation near Lone Pine. Gathered traffic information and forecasts, and conducted reconnaissance with local agency staff. Assessed traffic operations and impacts of the proposed project.

SR 237 Guadalupe Bridge Replacement, Santa Clara County (2003). Traffic task lead for this project to replace the bridge on SR 237 over the Guadalupe River. Developed transportation management plan, including detour plans and lane closure charts. Conducted operational analysis for staging plans and late lane re-opening penalties.

Route 70/Algodon Road Interchange, Yuba City (2002). Task lead for traffic operations analysis to support planning efforts for the Route 70/Algodon Road interchange near Yuba City. Led the analysis to assess future operations of the freeway, interchange, and cross-streets to identify design improvements.

Highway 114/Hyampom Road, Trinity County (2002 to 2005). Traffic task lead for evaluating a rural road in Trinity County. Mr. Bloomberg directed the effort to gather traffic information and forecasts, conduct reconnaissance with local agency staff, and evaluate existing and future traffic. He worked with client staff to achieve consensus on future forecasts, and helped craft the purpose and need statement.

Clinton-Keith Initial Study/Environmental Assessment, Southern California (2002 to 2005). Traffic task lead for preliminary engineering and environmental documentation for a new transportation corridor in Riverside County. Led the development of traffic forecasts, including integrating travel demand forecasts from the regional model and traffic impact studies. Conducted traffic analysis, and worked with the engineering team to optimize the design. Coordinated traffic inputs to the environmental team.

Harbor Boulevard Improvements Project, Southern California (2004 to 2005). Traffic task lead for preliminary engineering and environmental documentation for improvements to a congested major arterial in Costa Mesa. Coordinated data gathering from Caltrans and Costa Mesa, and conducted detailed operations analysis for multiple alternatives. Prepared traffic analysis documentation and coordinated traffic inputs to the design and environmental teams.

John Carrier, J.D.

Project Manager and Socioeconomics

Education

Juris Doctorate

M.B.A., Administration

B.A., Sociology

Relevant Experience

Mr. Carrier has 25 years of professional experience including the practice of redevelopment law, project management, regulatory compliance, permitting, economic impact analysis, fiscal impact analysis, feasibility studies, real estate economics, urban economics, public involvement/community relations, data collection and analysis, document preparation, and technical writing. For the last 7 years, Mr. Carrier has served as Program Manager overseeing all California power plant licensing work performed by CH2M HILL.

Representative Projects

Vernon Power Plant, Vernon California (2005 to present). Project Manager for the licensing of a 610-MW combined-cycle power plant to be located adjacent to the recently completed Malburg Generating Station (MGS). The project is a nominal 610-MW combined-cycle generating facility configured using two natural-gas-fired combustion turbine generators (Siemens SGT6-5000F) and one steam turbine generator. The Application for Certification was filed in March 2006.

Confidential Client, Southern California (2004 to present). Project Manager for the licensing of this 300-MW simple-cycle power plant to be located at a site formerly owned by Southern California Edison in California. The project will use three new GE LMS-100 turbines. A new high school is planned for construction across the street from the power plant. Preparation of the AFC was been put on hold pending the outcome of the SCE Request for Offers. Presently, the AFC is in preparation.

Walnut Energy Center, Turlock Irrigation District (2002 to present). Project manager for the licensing of this 250-MW combined-cycle generating facility configured using two natural-gas-fired combustion turbines and one steam turbine. The project included approximately 1,950 feet of new 115-kV transmission line, 670 feet of new 69-kV transmission line, 3.6 miles of new 8-inch-diameter natural gas pipeline, 1.6 miles of new 12- to 24-inch diameter pipeline for recycled water supply, and 0.9 mile of new pipeline for potable water supply to the plant. Upon review of the AFC, CEC staff stated "The Walnut Energy Center Project AFC is one of the most complete applications recently filed with the Commission." Mr. Carrier is also managing the construction compliance work. Also provided compliance monitoring support in the areas of Biological Resources, Cultural Resources, and Paleontological Resources during facility construction. The facility went online and began producing commercial power on February 28, 2006.

Application for Certification, Los Esteros Critical Energy Facility, Calpine C*Power, San Jose (2001). Served as the Discipline Lead for the Socioeconomics section of the AFC for this 180-MW power plant in north San Jose. Plant went online March 7, 2003.

San Francisco Electric Reliability Project (SFERP), City and County of San Francisco (2003 to present). Project Manager for the licensing of a 145-MW simple-cycle plant in the southeast section of San Francisco. The peaking plant would provide in-city generation to maintain electrical reliability while allowing the closure of Hunter's Point and possibly Potrero power plants. Originally co-located at the Potrero power plant, the site was relocated two blocks south to property owned by the City of San Francisco. The project would use water supplied from the city's combined sewer system and treat it onsite. The project was controversial due to its location in a minority area of the city.

San Joaquin Valley Energy Center, Calpine Corp., City of San Joaquin (2001 to 2004). Project manager for the licensing of a 1,060-MW combined-cycle merchant plant to be located in the city of San Joaquin. Preparation of the AFC included an analysis of 20 miles of gas lines and 21 miles of recycled water lines. Operation of the plant would provide a substantial economic benefit to the city by more than doubling its property tax base. The AFC was submitted under the CEC's recent guidelines for an expedited 6-month AFC. However, Calpine requested that the project be moved to the 12-month process. Key issues were visual resources, air quality, and noise.

Application for Certification, East Altamont Energy Center, Calpine Corp., Tracy (2001 to 2003). Discipline Lead for the Socioeconomics section of the East Altamont Energy Center AFC for a 1,100-MW power plant in Tracy, California.

MID Electric Generation Station (MEGS), Modesto Irrigation District (2003 to 2004). Deputy project manager for the SPPE to license a nominal 95-MW natural-gas-fired, simple-cycle generating facility consisting of two natural-gas-fired combustion turbines, approximately 0.25 mile of new 69-kV subtransmission line and fiber optic cable, 0.25 mile of new 8-inch diameter natural gas pipeline, and water supply and wastewater tap lines into City of Ripon lines in Stockton Avenue. The project would occupy 8 acres within a 12.25-acre parcel. This plant had noise and land use issues to resolve. Plant is under construction and expected to go online in June 2006.

Metcalf Energy Center, Calpine Corp., San Jose (1998 to 2005). Project manager for the licensing of this 600-MW power plant in south San Jose. This highly controversial project took 2.5 years to license through the CEC and resulted in a precedent-setting override of local government after the mayor and city council voted not to grant the requested entitlements. Key issues included changes to local entitlements, noise impacts to adjacent land uses, visual impacts, biological impacts, air quality impacts, and use of groundwater as a backup water source. Project Manager for construction monitoring for Biological Resources, Cultural Resources, and Paleontological Resources. Also provided compliance monitoring for construction. Plant went online May 27, 2005.

Cosumnes Power Plant, SMUD (2001 to 2003) Project manager for a two-phase, 1,000-MW combined-cycle power plant on buffer lands for the former Rancho Seco Nuclear Plant.

Preparation of the AFC required analysis of 26 miles of new gas line crossing the Cosumnes River and several creeks. Key issues were water supply, air quality, cultural resources, biological resources, visual resources, and noise. The gas pipeline went through highly sensitive cultural resource areas and required extensive coordination with local Native Americans. Plant went online February 28, 2006.

Application for Certification, Sutter Power Plant, Calpine Corp., Yuba City (1997 to 1999).

Discipline Lead for the Socioeconomics section of the Sutter Power Plant AFC. Plant went online July 2, 2001.

Application for Certification for three Natural Gas-fired Energy Facilities, to be co-located with PG&E substations in San Mateo County (San Mateo Peaking Project and Martin Peaking Project) and Santa Clara County (Scott Peaking Project) (2000). Deputy Project Manager for the preparation of three Applications for Certification on expedited licensing schedule enacted by gubernatorial executive order. In addition, Mr. Carrier served as the discipline lead for Land Use and Socioeconomics for the Martin Substation AFC; and Socioeconomics Lead for the Scott and San Mateo projects.

Woodland Generation Station 2, Modesto Irrigation District (MID) (2001 to 2003). Project manager for the SPPE to license an 80-MW plant in Modesto. The new plant was located adjacent to and integrated with MID's existing Woodland Generation Station 1. The SPPE was completed in a record setting 4.5 months. CH2M HILL also provided construction monitoring for Biological Resources, Cultural Resources and Paleontological Resources. The plant is under commercial operation.

Denair and August Substations, Turlock Irrigation District (2004 to 2005). Providing general oversight for the preparation of an Initial Study/Mitigated Negative Declaration (IS/MND) under CEQA for two substations that TID needs to serve anticipated load growth.

Upper American River Project, SMUD (2003 to present). Project manager for preparation of three studies in support of SMUD's UARP relicensing effort. In support of the relicensing and addition of a pumped storage project (Iowa Hill), he reviewed and revised a Socioeconomic Impact Analysis prepared by California State University, Sacramento. In addition, he addressed the socioeconomic impacts from the Iowa Hill pumped storage component. CH2M HILL is also preparing an analysis of the impact of the Iowa Hill project on property values and impacts of noise on nearby residential receptors.

Transmission Line and Gas Line Corridor Studies, SMUD (1992 to 1993). Project manager for the preparation of studies performed by SMUD in relation to the licensing of five power plants in the Sacramento area: Carson Energy; ARK Energy; Procter & Gamble; Campbell Soup; and the Sacramento Rendering Plant. This project involved performing spring biology surveys for all of the transmission line corridors and gas line corridors related to the five projects. In addition, it included preparation of all sections of the AFC or SPPE related to the transmission lines and gas line corridors for the five projects. Other disciplines included cultural resources, transmission line safety and nuisance, transmission system evaluation, transmission line engineering, visual, land use, and socioeconomics.

John Cleckler

Biological Resources

Education

B.S., Wildlife Biology

Professional Certifications

California Department of Fish and Game Scientific Collector's Permit

Relevant Experience

Mr. Cleckler's more than 15 years of experience include performing general and special-status wildlife surveys using standard census techniques. His expertise includes invertebrate and vertebrate natural history, vertebrate and invertebrate collecting methods, and identification of herpetile, bird, and mammalian species. He is familiar with state and federal regulations pertaining to both wildlife and wetlands. He prepares biological assessments and develops mitigation plans for Section 7 and 10(a) compliance under the Endangered Species Act.

Representative Projects

Metcalf Energy Center (MEC), Calpine Corp., San Jose (2001 to 2005). Assisted in preparation of the Biological Resource Mitigation Implementation and Monitoring Plan, Resource Management Plan for the MEC Preserve, Fisher Creek Riparian Corridor Enhancement Plan, and Horizontal Directional Drilling Inadvertent Returns Contingency Plan. Managed monitoring efforts, provided document review, and prepared the environmental training program associated with the Metcalf Energy Center.

Roseville Energy Park (2005). Prepared the associated environmental training program.

San Francisco Electric Reliability Project AFC (2004 to 2005). Conducted site reconnaissance surveys and participated in the preparation of the AFC.

SMUD Cosumnes Power Plant AFC (2003). Conducted site reconnaissance surveys for the preparation of the AFC.

Walnut Energy Center, Turlock Irrigation District (2003 to 2005). Conducted site reconnaissance surveys and participated in the preparation of the AFC. Prepared the AFC and the Biological Resource Mitigation Implementation and Monitoring Plan. Managed monitoring efforts, provided document review, and prepared the environmental training program associated with the Walnut Energy Center as the Designated Biologist.

Inland Empire Energy Center (IEEC), Calpine Corp. (2005). Performed field surveys and assisted in preparation of the amended AFC.

MID Electric Generation Station (MEGS), Modesto Irrigation District (2004). Conducted site reconnaissance surveys and participated in the preparation of the SPPE.

Woodland Generation Station 2, Modesto Irrigation District (2003 to 2004). Provided biological monitoring to ensure compliance with conditions of site certification.

Teayawa Energy Center, Riverside County. Performed protocol desert tortoise surveys along proposed utility lines associated with the Teayawa Energy Center project. Assisted with preparation and review of the biological resources section of the EIS/EIR.

Fiber Optic Communications Cable, Level (3) Communications. Performed a full range of biological permitting services in support of a nationwide fiber optic network installation project. This linear project included extensive segments transecting the Mojave Desert and the Central Coast regions. Approximately 75 percent of the buried fiber optic cable system was within railroad rights-of-way. The remainder was within highway rights-of-way and limited private lands. Responsibilities included environmental documentation and permitting, including wetland delineations, biological resource surveys, and agency consultation.

Fiber Optic Communications Project Construction Monitoring-Level (3) Communications. Managed construction monitoring of a 96.5-mile long-haul fiber optic communications line. Special focus was placed on avoidance of desert tortoise and Mohave ground squirrel habitat. Included development and implementation of an environmental awareness program.

Bird/Wind Turbine Collision Study, California Energy Commission. Participated in a 3-year wind farm impact study near Tehachapi and Palm Springs. Conducted standard point count surveys and scavenger studies to determine the correlation between bird activity and bird mortality in and around wind farm developments. Also included coordination of the Palm Springs field station, field staff, data entry, and report writing.

Mohave Ground Squirrel Survey, California Energy Commission. Trapped, handled, and installed pit tags on Mohave ground squirrels near China Lake.

Desert Tortoise Survey, Kern River Gas Company. Surveyed for, handled, marked, and relocated desert tortoises for a pipeline construction project. Monitored construction activities and maintained client relations. Coordinated biology crews and completed daily reports. Surveys were conducted in accordance with Biological Opinion #1-1-89-F36R.

San Joaquin Sanctuary Restoration Project, Irvine Water District. Conducted breeding bird surveys with special focus on the presence of least Bell's vireo. Monitored construction activities near critical habitat.

Biological Assessment, Casmalia Resources Landfill, Casmalia. Prepared biological assessment for hazardous waste remediation activities.

Doug Davy, Ph.D.

Project Manager

Education

Ph.D., Archaeology

M.A., Anthropology

B.A., Anthropology

Relevant Experience

Dr. Davy has 22 years of experience in the environmental consulting industry providing regulatory compliance and project management support for infrastructure development projects. This experience includes National Environmental Policy Act and California Environmental Quality Act compliance for commercial, government, and military clients. He has served as project manager for environmental licensing and permitting projects directing multidisciplinary teams of planners, engineers, and scientists in helping to resolve complex environmental regulatory issues.

Representative Projects

Inland Empire Energy Center, Calpine Corporation, Riverside, California (2001 to 2003 and 2004 to 2005). Project manager for Application for Certification before the California Energy Commission for 810-MW natural gas-fired power plant in Riverside County, California. Directed multidisciplinary team of scientists and engineers in preparing testimony for licensing. Managed preparation of license amendments, including conversion of the turbine technology to the GE Energy S107H System and for a rerouting of the natural gas pipeline. Coordinated consultations with CEC staff and other regulatory agencies. Project licensed in December 2003 and scheduled to begin construction in August 2005.

Los Esteros Critical Energy Facility Phase 1 Relicense and Phase 2 Combined-Cycle Conversion, Calpine Corporation, San Jose, California (2003 to 2005). Project manager for Application for Certification before the California Energy Commission that included relicensing a 180 MW simple-cycle power plant in San Jose, California, and a conversion to combined-cycle operation that would increase the nominal plant output to 320 MW. Phase 1 recertified March 2005. Certification of Phase 2 expected in July of 2005.

Roseville Energy Park, Roseville Electric, Roseville, California (2003 to 2005). Project manager for Application for Certification before the California Energy Commission for a 160-MW natural gas-fired power plant in Roseville, California. Directed multidisciplinary team of scientists and engineers in providing project development support and preparing application document, responding to data requests. Participated in consultations with CEC staff and other regulatory agencies including the Placer County Air Pollution Control District and USACE. Project certified in April 2005 and will begin construction in August 2005.

Donald Von Raesfeld Power Plant/Pico Power Project, Silicon Valley Power, Santa Clara, California (2002 to 2005). Project Manager for Application for Certification before the California Energy Commission for 123 MW natural gas-fired power plant in Santa Clara, California. Directed multidisciplinary team of scientists and engineers in providing project development support and preparing application document, responding to data requests, and providing expert testimony. Participated in consultations with CEC staff and other regulatory agencies. Project challenges included developing a mitigation plan for air emissions deposition effects on the Bay checkerspot butterfly, rezoning of the project site, negotiating Best Available Control Technology standards, and FAA air navigation hazard clearance. The project was commissioned in June 2005 and is in operation.

Russell City Energy Center, Calpine/Bechtel Joint Development, Hayward, California (2000 to 2002). Project manager for the preparation of an Application for Certification before the California Energy Commission for a 600-MW natural gas-fired power plant in Hayward, California and appurtenant facilities including natural gas, water supply, and electrical transmission lines. Prepared Environmental Assessment associated with reconductoring 14 miles of 230 kV transmission line. Project qualified for an expedited 6-month licensing process under the Governor's emergency power plant licensing Executive Order and was licensed in September of 2002.

Newark Energy Center, Calpine/Bechtel Joint Development, Alameda County, California (1999 to 2000). Project manager for the preparation of an Application for Certification before the California Energy Commission for a 600-MW natural gas-fired power plant in Alameda County, California and appurtenant facilities including natural gas, water supply, and electrical transmission lines.

Sutter Energy Center, Calpine Corporation. Sutter County, California (1998 to 2000). Project manager for an Application for Certification before the California Energy Commission for a 600-MW natural gas-fired power plant in Sutter County, California, and appurtenant facilities including 12 miles of natural gas and 4 miles of electrical transmission lines. Coordinated a multidisciplinary team during the Discovery and Decision phases of licensing. Key analyses included preparing water temperature and water quality models, identifying emission reduction credits, and assessing potential impacts along an electrical transmission route.

Three Applications for Certification under AB970, Calpine C* Power, California (2000 to 2001). Project Manager for preparation of Applications for Certification for three peaking power plant license applications to be permitted under California's AB970 'fast-track' permitting law. Directed a multidisciplinary team that completed the three California Energy Commission AFCs simultaneously in a very short time frame to meet the data adequacy deadline specified by AB970. The projects included the Eastshore Substation project in Hayward, Newark Substation project in Fremont, and Warnerville project, near Oakdale, California.

Critical Project Development and Licensing Reviews, Calpine Corporation (2001 to 2003). Project Manager for critical project development and licensing issues reviews for 10 prospective power plant development sites in California. Managed a multidisciplinary team that assessed

critical issues in terms of air quality, land use, visual resources, biological resources, noise, socioeconomics, and geological hazards for prospective power plant sites at various locations throughout California.

Environmental Specifications for the Piñon Pine Power Project, Sierra Pacific Power Company (1999). Project Manager for regulatory compliance specifications manual for final design and construction phases of Integrated Gasification Combined-Cycle power plant in eastern Nevada. Directed a multidisciplinary team to prepare discipline-specific environmental specifications for construction and operation.

North Area and California-Oregon Transmission Project Right-of-Way Maintenance Environmental Assessments, Aspen Environmental Group (2004 to 2005). Project Manager for program to assist Western Area Power Administration to develop a complete, GIS-based, inventory of biological and cultural resources for more than 770 miles of transmission rights-of-way and access roads of their North Area transmission system. Western will use this information to prepare an Environmental Assessment for right-of-way operation and maintenance and as an information base for regulatory compliance for all future ROW maintenance activities. The project also includes the California-Oregon Transmission Project, which owned by the Transmission Agency of Northern California and managed by Western.

Oakland Army Base Disposal And Reuse EIS, U.S. Army Corps Of Engineers (1999 to 2001). Project Manager for Environmental Impact Statement under the National Environmental Policy Act for disposal and reuse of the Oakland Army Base, Oakland, Alameda County, California. Assessed potential effects of the Local Reuse Authority's adopted Reuse Plan and 6 alternative reuse scenarios for 424-acre port and military installation. Key issues included potential effects of traffic and air quality, and potential effects on the least tern and brown pelican.

Otay Mesa Power Plant Project, Calpine Corporation (2000). Conducted due diligence review of environmental licensing and permitting issues related to the Otay Mesa Power Plant project, located in San Diego County, California. Reviewed Application for Certification and other California Energy Commission documentation and prepared a licensing and permitting risks and issues summary.

Matthew Franck

Water Resources

Education

B.S., Environmental Policy Analysis and Planning

Distinguishing Qualifications

Conducted environmental studies throughout California, Oregon, and Washington

Relevant Experience

Mr. Franck is an environmental planner with CH2M HILL. He has 15 years of experience in managing and writing environmental impact assessment documents in compliance with NEPA and CEQA. He also coordinates local, state, and federal regulatory processes. Mr. Franck's education and multidisciplinary experience, as well as his expertise in land use and resource planning, provide a solid background for evaluating complex environmental policy issues.

Representative Projects

Roseville Energy Park (2003 to 2005). Provided senior review of Land Use section

Confidential Southern California Power Project (2004 to present). Task Lead for Water Resources section, including analysis of constituent concentrations in effluent under various scenarios. Lead author for water resources section (under preparation).

Walnut Energy Center AFC (2002 to present). Provide senior review of Water Resources section.

San Francisco Electric Reliability Project, Public Utilities District for the City and County of San Francisco, California (2003 to present). Task Manager for the preparation of the Water Resources section of this Application for Certification, a California Energy Commission process that is functionally equivalent to CEQA. The CEQA-equivalent evaluation is focuses on water, wastewater, and stormwater generation and use by the proposed facility in the context of Citywide compliance with the federal Clean Water Act and state Porter-Cologne Water Quality Control Act.

Modesto Irrigation District Electric Generation Station, Modesto Irrigation District, Ripon, California (2003 to 2004). Task Manager for the preparation of the Water Resources section of this Small Power Plant Exemption, a California Energy Commission process that is functionally equivalent to CEQA. The CEQA-equivalent evaluation focused on water, wastewater, and stormwater generation and use by the proposed facility in compliance with the federal Clean Water Act and state Porter-Cologne Water Quality Control Act.

Ongoing Environmental Documentation and Permitting Support, OMI-Thames Water, Stockton, California. Task Manager for environmental documentation and permitting support for the contract operation of the City of Stockton's wastewater, water, and stormwater infrastructure. To date, the major task in this support effort has been the coordination of a

contractor's preparation of an Environmental Impact Report under CEQA for the upgrade of the City's wastewater treatment plant in accordance with Clean Water Act requirements. Another major task is the preparation of an application to the U.S. Coast Guard for a new utility bridge crossing of the San Joaquin River, including a NEPA Environmental Assessment. The utility bridge project has also included extensive agency coordination with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, California Department of Fish and Game, Central Valley Regional Water Quality Control Board, and state and local levee agencies.

Bradshaw Interceptor and Road Widening, Sacramento Regional County Sanitation District, Sacramento, California. Task Leader for the coordination of all environmental permit activities to the construction of a large-diameter sewer interceptor along Bradshaw Road in Sacramento County, and the widening of the road from two to four lanes. Permitting agencies include the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Game, Central Valley Regional Water Quality Control Board, and the State Historic Preservation Officer. Managed staff in wetland delineation and special-status species surveys. Also coordinated with the County's Department of Environmental Review and Assessment to ensure the completion of environmental documentation for the project.

Water Treatment Plant Expansion, City of Sacramento, California. Coordinated preparation of the City of Sacramento's Environmental Impact Report to assess the planned expansion of the E.A. Fairbairn and Sacramento River Water Treatment Plants. Responsible for preparing and coordinating the preparation of all impact sections. The EIR required project-level impact considerations that included the application of PROSIM, a hydrologic model used to simulate Central Valley Project water deliveries.

Use Permit for Land Treatment of Agricultural Process Wastewater, Colusa Industrial Properties, Colusa, California. Task Leader for the preparation of a CEQA Initial Study for the use of a parcel of land for land disposal of agricultural process wastewater. The Initial Study was required to satisfy Colusa County Use Permit requirements. Prepared entire Initial Study with the assistance of soil scientists and water quality specialists. Assisted in the regulatory process for the issuance of Waste Discharge Requirements by the Central Valley Regional Water Quality Control Board.

Wendy Haydon

Visual Resources

Education

M.S., Recreation Administration

B.A., Environmental Studies

Relevant Experience

Ms. Haydon manages environmental document preparation and conducts recreation, visual resources, and land use analyses. She has 18 years of experience working on environmental documents meeting federal and state requirements, including Environmental Impact Reports (EIRs), Environmental Impact Statements (EISs), Environmental Assessments (EAs), Initial Studies (ISs), mitigation plans, and CEC environmental documents. She has participated in the planning or study of a wide variety of projects, including energy facilities, hydroelectric projects, infrastructure improvements, transportation facilities, urban development, land transfers, and aggregate production facilities. Ms. Haydon has considerable knowledge of CEQA, NEPA, land use and visual analyses, recreation planning, and permit acquisition. She has also been involved in the development of public participation programs.

Representative Projects

Application for Certification, Walnut Energy Center, Turlock Irrigation District (2002 to 2004). Conducted the visual resources analysis of the construction and operation of a proposed power plant. The task consisted of characterizing the existing surrounding landscape, identifying Key Observation Points, taking daytime photos from the KOPs, directing the preparation of daytime visual simulations of the project as seen from the KOPs, assessing the visual impacts of the project, and identifying mitigation for significant impacts.

Application for Certification, San Francisco Electric Reliability Project, San Francisco Public Utilities Commission (2004). Conducted the visual resources analysis of a proposed 145-MW power plant, to be constructed and operated adjacent to the San Francisco Bay. The task consisted of characterizing the existing surrounding landscape, identifying Key Observation Points, taking daytime photos from the KOPs and from other locations in the city, directing the preparation of daytime visual simulations of the project as seen from the KOPs, assessing the visual impacts of the project, and identifying mitigation for significant impacts.

Small Power Plant Exemption, MID Electric Generation Station (MEGS), Modesto Irrigation District (2001). Conducted the visual resources analyses of the construction and operation of a proposed power plant. The task consisted of characterizing the existing surrounding landscape, identifying two Key Observation Points, taking daytime photos from the KOPs, directing the preparation of daytime visual simulations of the project as seen from the KOPs, assessing the visual impacts of the project, and identifying mitigation for significant impacts.

Application for Certification, Cosumnes Power Plant, SMUD (2001 to 2003). Conducted the visual resources analysis of a proposed power plant to be constructed and operated adjacent to the existing Rancho Seco Nuclear Power Plant facilities. The task consisted of characterizing the existing surrounding landscape, identifying Key Observation Points (KOPs) (sensitive receptor viewing locations), taking daytime and nighttime photos from the KOPs, directing the preparation of daytime visual simulations of the project as seen from the KOPs, assessing the visual impacts of the project, identifying mitigation for significant impacts, and providing expert testimony before the CEC.

Small Power Plant Exemption, Woodland Generation Station 2, Modesto Irrigation District (2001). Conducted the visual resources analysis of the proposed power plant to be constructed and operated adjacent to the existing MID Woodland Generation Station. The task consisted of characterizing the existing surrounding landscape, identifying Key Observation Points, taking daytime photos from the KOPs, directing the preparation of daytime visual simulations of the project as seen from the KOPs, assessing the visual impacts of the project, and identifying mitigation for significant impacts.

Iowa Hill Pumped Storage Project, SMUD (2004). Co-conducting the property value analysis of a pumped storage facility, ancillary facilities, transmission line, and improved roadway to be constructed and operated on/near Iowa Hill. Responsible for identifying privately owned properties within 3 miles of project facilities and determining which properties would have views that could be affected.

Initial Study/Mitigated Negative Declaration, Denair Substation, Turlock Irrigation District (2004). Conducted the visual resources analysis of the construction and operation of a proposed 115-kV electrical substation. The task consisted of characterizing the existing surrounding landscape with text and photos, assessing the visual impacts of the project, and identifying mitigation for significant impacts.

Teayawa Power Plant, Imperial County (20001 to 2001). Conducted the visual resources analysis of a 300-MW energy center to be constructed and operated on tribal land, a transmission line, natural gas pipeline, and water supply to be constructed in the Coachella Valley for an EIS. The task consisted of characterizing the existing surrounding landscape, identifying Key Observation Points, taking photos from the KOPs, directing the preparation of visual simulations of the project as seen from the KOPs, assessing the visual impacts of the project, determining the compatibility of the project with the Bureau of Land Management Visual Resource Management Program, and identifying mitigation for significant impacts.

Tom Lae, R.G.

Geological Hazards and Resources

Education

B.S., Geology

Professional Registrations

Registered Geologist: California

Relevant Experience

Mr. Lae has more than 14 years of experience in environmental geology and project management. Projects include numerous power plant licensing projects, Superfund site investigations, remedial investigations/feasibility studies, underground storage tank/oil water separator closures, landfill groundwater monitoring, and environmental assessments.

Representative Projects

Applications for Certification, Electrical Power Plants (2000 to 2005). Has prepared geologic hazards and resources sections for eight AFCs. These include **Cosumnes Power Plant (SMUD)**, **East Altamont Energy Center (Calpine)**, **Central Valley Energy Center (Calpine)**, **Los Esteros Energy Center (Calpine)**, **Woodland II (Modesto Irrigation District)**, **MID Electric Generation Station (Modesto Irrigation District)**, **Walnut Energy Center (Turlock Irrigation District)**, and **San Francisco Electric Reliability Project (San Francisco Public Utilities Commission)**. Mr. Lae is well versed in the assessment of geologic resources and hazards relating to CEQA and NEPA requirements.

Superfund Site Investigations, California (ongoing, 2000 to present). Project (site) manager for the Cooper Drum Superfund site, located in Southgate. This project involves the evaluation and remedial investigation of soil and groundwater contamination from past releases at a drum recycling center. Mr. Lae also serves as a task manager for the Lava Cap Mine site in Nevada City. This site has been affected by arsenic contamination from past gold mine processing.

Oil/Water Separator Closure Investigation, Beale AFB, Marysville, California (ongoing, 2003 to present). Project manager for the evaluation of 25 former oil/water separators (OWSs) for regulatory closure. The project includes the assessment of environmental impacts to underlying soil and groundwater from past releases and preparing closure documentation. To date, Mr. Lae has successfully received closure of 10 OWSs and another 8 OWSs are pending regulatory report review.

Underground Storage Tank and Oil Water Separator Investigation, Rough and Ready Island, Stockton (2001 to 2003). Project manager for three U.S. Navy project sites at Rough and Ready Island. These projects involved the evaluation of soil and groundwater contamination at sites with underground storage tanks or oil water separators. Soil and groundwater samples were collected and analyzed to determine the presence or absence of contamination. Each of the three

sites was successfully evaluated and a determination of “No Further Assessment” was received by the Regional Water Quality Control Board.

Groundwater Monitoring, City of Roseville (ongoing, 2002 to present). Project manager for the annual and semi-annual groundwater reports for the former sanitary landfill. Duties include planning sampling events, evaluation of laboratory data, preparation of graphics and tabular data, and report writing. Mr. Lae also supports landfill gas studies at the site.

Phase II Environmental Assessment, City of Roseville (2002 to 2003). Conducted a Phase II environmental assessment of a former tire fire site with lead contamination. Duties include the workplan preparation, conducting fieldwork, data review, and report preparation.

Remedial Investigations, Northern California (ongoing, 2000 to present). Task manager/team member for several ongoing investigations at Beale AFB and former McClellan AFB. Duties include site supervision of staff, site management, and report writing. Report writing duties include reviewing field and laboratory data; determining nature and extent of contamination; developing graphic aids to illustrate contaminant distributions; identifying data gaps; presenting findings to upper management and clients; creating field sampling plans; and performing third-party document review.

Phase 3 Removal Action, Castle Airport, Merced(1999 to 2000). Field supervisor of three crews during installation of 18 injection, extraction, and monitoring wells drilled with air rotary casing hammer and mud rotary drilling methods. Duties included preparing schedules, implementing overall project field sampling plans, supervising field staff, reviewing boring logs, overseeing subcontractors, ensuring quality compliance of staff and subcontractors, designing wells, interpreting downhole geophysical logs, conducting well development, serving as laboratory and client project contact, compiling daily and monthly status reports, and tracking budgets.

Groundwater Well Installation, Castle Airport, Merced (1999). Field supervisor for installation of deep groundwater wells to monitor removal action at Castle Airport. The monitoring wells were drilled using mud-rotary drilling equipment, and designs were based on downhole geophysical surveys. Duties included overseeing subcontractor, logging subsurface geologic data, collecting and interpreting in-situ groundwater samples, interpreting geophysical surveys, and designing and developing wells.

Fieldwork, McClellan AFB and Castle AFB (1992 to 2000). Provided site reconnaissance and placement of boring/sampling locations; supervised subcontractors; enforced project quality assurance plan; logged lithologic samples; collected soil, soil gas, and groundwater samples; ensured health and safety plan compliance of subcontractors; trained new field staff on established protocols; generated daily progress reports; tracked waste containers; assisted in the placement, design, and construction of soil vapor extraction, nested soil vapor monitoring, and groundwater extraction wells; conducted subsequent step, drawdown, and long-term pumping well tests for groundwater wells; and performed SVE tests.

Steve Long

Soils and Agriculture

Education

M.S., Soil Science

B.S., Forest Resources

Professional Registrations

Soil Science Society of Southern New England

Relevant Experience

As an environmental scientist, Mr. Long is responsible for a wide range of tasks associated with natural resource and hydrogeologic environmental evaluations. Duties include evaluating contaminants study results for surface water, sediment and biota, relating land use to surface water quality, preparation of proposals, field data collection, interpretation, and preparation of reports and presentation of results.

His natural resource experience includes 17 years of evaluation of wetland systems. Duties have included delineation and documentation of wetlands by federal and state criteria in California, Nevada, Connecticut, Massachusetts, New York, New Hampshire, and Maine; evaluation of project constraints and development of alternate strategies for local, state, and federal permitting. Recent participation in Superfund site ecological risk assessment for stream impacts and air monitoring programs for public health risk assessments.

Hydrogeological experience includes in-field testing of soil, soil gas and groundwater samples using portable gas chromatograph; in-situ aquifer permeability testing; monitoring subsurface explorations and installations (monitoring wells, piezometers and vapor extraction systems); environmental sampling and analytical testing; and development of contaminant transport hydrogeologic models. Strong skills in onsite chemical testing; description and taxonomic classification of soils, vegetation, and insects; permitting of wetland activities; and statistical analyses of groundwater analytical data.

Representative Projects

Application for Certification, Los Esteros Critical Energy Facility, Calpine C*Power, San Jose, California (2001 to present). Prepared Biological Resources Mitigation and Monitoring Plan (BRMIMP) for the Los Esteros Critical Energy Facility. Also documented the extent of jurisdictional waters of the U.S. at a stormwater outfall along Coyote Creek. Prepared a Low Effect Habitat Conservation Plan for the Phase II Facility. This plan was submitted for Section 10 consultation with the U.S. Fish and Wildlife Service to secure an incident take permit for Bay Checkerspot butterfly and to offset potential impacts to four endemic serpentine plants under the Endangered Species.

Application for Certification, East Altamont Energy Center, Calpine Corp., Tracy, California (2001 to 2002). Prepared CEQA-equivalent documentation to support an Application for Certifications (AFC) for review by the California Energy Commission. Prepared AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant projects including all linear features (transmission lines, water supply and discharge lines, and natural gas supply lines). This documentation also included a summary of applicable laws, ordinances, and regulations (LORS), estimates of soil losses from wind and water erosion during construction, and agencies contacts. Additionally, conducted field investigations to assess wetlands in proximity to linear routes for the East Altamont Energy Center.

San Joaquin Valley Energy Center, Calpine Corp., City of San Joaquin, California (2001 to 2002). Prepared CEQA-equivalent documentation to support an Application for Certifications (AFC) for review by the California Energy Commission. Prepared AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant projects including all linear features (transmission lines, water supply and discharge lines, and natural gas supply lines). This documentation also included a summary of applicable laws, ordinances, and regulations (LORS), estimates of soil losses from water erosion during construction, and agencies contacts.

Metcalf Energy Center, Calpine Corp., San Jose, California (2001 to present). Conducted field investigations to support Metcalf Energy Center Application for Certification. Field investigations included assessment of riparian biological resources in proximity to site and delineation of wetlands in proposed floodwater retention area. Produced riparian mitigation planting plan. Assisted biological construction monitoring in June 2005 by conducting survey for birds nests along fencing re-alignment.

Delta Energy Center Project in Contra Costa County, California for Calpine/Bechtel, San Francisco, California (1998 to 2000). Completed NPDES permit application for Pittsburgh Delta Energy Center for submittal to Bay Area Regional Water Quality Control Board.

Confidential Southern California Power Project (2004 to present). Prepared CEQA-equivalent documentation to support an Application for Certifications (AFC) for review by the California Energy Commission. Prepared AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant projects including all linear features (transmission lines, water supply and discharge lines, and natural gas supply lines). This documentation also included a summary of applicable laws, ordinances, and regulations (LORS), estimates of soil losses from wind and water erosion during construction, and agencies contacts.

Walnut Energy Center, Turlock Irrigation District (2003). Prepared CEQA-equivalent documentation to support an AFC for review by the California Energy Commission. Prepared AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant projects including all linear features (transmission lines, water supply and discharge lines, and natural gas supply lines). This documentation also included a summary of applicable laws, ordinances, and regulations (LORS), estimates of soil losses from wind and water erosion during construction, and agencies contacts. Prepared Response to Comments from the CEC.

John Lowe

Public Health

Education

B.S., Environmental Toxicology

Professional Registrations

Certified Industrial Hygienist, Comprehensive Practices: American Board of Industrial Hygiene (1985, Certificate No. 3152)

Relevant Experience

Mr. Lowe has 25 years of experience in assessing the potential for adverse health effects to workers and the general public associated with chemical contaminants or radionuclides in air, soil, and water. Mr. Lowe serves as task manager for preparing risk assessments used in environmental restoration and impact analyses for both commercial and government clients. Project experience includes: preparation of risk assessments and impact analyses of air emissions in support of permitting for industrial facilities, hazardous waste facility, municipal solid waste landfills and incinerators; public health impact analyses for EIR/EISs; preparation of risk assessments, data quality objectives and sampling designs for investigations conducted under RCRA, CERCLA and state hazardous waste programs; development of cleanup goals for feasibility studies and remedial design/remedial action of hazardous waste sites. His principal activities have been using risk assessment for making informed decisions about managing chemical and radiological hazards in the environment, assuring that sampling and analytical programs provide adequate data for decisionmaking, and developing cleanup goals that support future land use development strategies. Mr. Lowe has extensive experience with the evaluation of potential indoor and ambient air exposure pathways associated with the emissions of chemical substances from soil or groundwater. He has been responsible for the planning and development of several investigations designed to evaluate indoor or ambient air exposure pathways. He has also led or participated in numerous studies involving the modeling of indoor or ambient concentrations in air with emissions and air dispersion models, including the Johnson and Ettinger model. Mr. Lowe has followed closely the various state and federal regulatory initiatives that are responding to the emerging area of indoor vapor intrusion from chemical substances in the subsurface environment.

Representative Projects

Risk Assessor, RCRA Program, Maine Yankee Plant Decommissioning and Environmental Restoration, Wiscasset, ME. Developed cumulative risk assessment and risk harmonization methodologies for chemical carcinogens and radionuclides, as part of the NRC decommissioning and RCRA closure activities at Maine Yankee. This activity is enabling Maine Yankee to comply with a Maine state legislative requirement to address cumulative risks from chemicals and radionuclides.

Indoor Air Monitoring Program, confidential telecommunications client, California, 2003-present. Mr. Lowe is a senior consultant responsible for development of the overall indoor air monitoring approach at this site. This indoor air monitoring program has been initiated in response to concerns by U.S. Environmental Protection Agency (EPA) Region 9 regarding potential vapor intrusion from chlorinated volatile organic compounds in soil underlying residential areas near the former GTE site. The objective of this program is to determine if there are potentially complete exposure pathways, in accordance with EPA's recent guidance for evaluation of vapor intrusion exposure pathways. An important element in the air monitoring program is CH2M HILL's homeowners notification program to notify, educate and obtain the cooperation and permission of residents to conduct air sampling in the identified residences. CH2M HILL's monitoring approach also incorporates tiered action levels corresponding to progressive responses to detected concentrations in indoor air, and evaluation of background concentrations, which may be indistinguishable from conservative, agency-specified risk-based levels in air.

Vapor Intrusion Investigation; McGaffey and Main Groundwater Plume Site; Roswell, New Mexico (2003-present). Under contract to EPA Region 6, CH2M HILL is conducting an evaluation of potential vapor intrusion pathways into structures from perchloroethylene (PCE) in soil gas and ground water at the McGaffey and Main Ground Water Plume Site in Roswell. An initial task in this evaluation has been collection of soil gas, subslab soil gas, indoor and background ambient air samples from selected structures. Participated in developing the sampling approach and data quality objectives for this investigation, in accordance with EPA's recently developed guidelines for evaluation of vapor intrusion pathways. The objectives of this investigation are to determine if vapor intrusion pathways into selected structures are potentially complete based on soil gas and subslab soil gas data, confirm potential vapor intrusion pathway into the selected residence via with crawlspace using ambient/crawlspace air samples and collect information needed to conduct modeling using the Johnson and Ettinger model.

Program Risk Assessor; Voluntary Environmental Corrective Action Program (VECAP); The Hoover Company; Canton, Ohio (1999-present). Program risk assessor for a RCRA Corrective Action being performed by The Hoover Company. Important elements of the corrective action approach include: implementation of the tiered approach described in the American Society for Testing and Materials (ASTM) risk-based corrective action (RBCA) methodology; perimeter investigation for early identification of potential offsite risks, and integration of investigations and stabilization measures as needed to reduce the time needed to complete corrective action. Chlorinated VOC releases (perchloroethylene) from the facility migrated to offsite groundwater, underneath commercial and residential land use areas adjacent to the facility.

Sarah Madams

Worker Health and Safety

Education

B.S., Environmental Toxicology

Relevant Experience

Ms. Madams has more than 9 years of professional experience including project management, regulatory compliance, permitting, public involvement/community relations, data collection and analysis, database management, compliance audits, document preparation, and technical writing. For the last 4 years, Ms. Madams has served as the Deputy Project Manager for power plant licensing work performed by CH2M HILL. Her expertise includes working with multidisciplinary teams to assess the environmental impacts of power plant projects on the environment. These assessments include impacts to air, biological and cultural resources, land uses, noise, socioeconomics, public health, water and visual resources, soils and geology, and paleontology.

Representative Projects

Confidential Southern California Power Project (2004 to present). Project Coordinator for the AFC for a 100-MW power plant. She reviewed applications, coordinated multidisciplinary data requests and responses, and served as liaison and coordinated efforts between CEC project management and staff.

Application for Certification, Los Esteros Critical Energy Facility, Calpine C*Power, San Jose, California (2002 to 2003). Project Coordinator for the AFC for a 180-MW power plant. The project required the preparation of numerous other studies/documents to satisfy the CEC staff request. These studies/documents included the preparation of a General Plan amendment and planned development zoning applications, archaeological and paleontological survey reports, and biological resource protection permits. Ms. Madams assisted with the development and implementation of biological, cultural, and paleontological resource monitoring programs; risk management plan; and traffic and transportation management plan. The plant is currently in operation.

Application for Certification, San Francisco Electric Reliability Project, San Francisco Public Utilities Commission, California (2003 to present). Project Coordinator for the AFC for a 145-MW simple-cycle power plant. She reviewed applications, coordinated multidisciplinary data requests and responses, attended public workshops, and prepared a site investigation report for the process water route. Assisted in preparation of Hazardous Materials and Hazardous Waste Sections for the AFC. In addition, she served as liaison and coordinated efforts between CEC project management and staff.

Small Power Plant Exemption, MID Electric Generation Station (MEGS), Modesto Irrigation District, California (2003). Project Coordinator for the SPPE for a 95-MW peaking plant. She

reviewed applications, coordinated multidisciplinary data requests and responses, and served as liaison and coordinated efforts between CEC project management and staff.

Application for Certification, Walnut Energy Center, Turlock Irrigation District, California (2002 to 2003). Project Coordinator for the AFC for a 250-MW combined cycle power plant. She reviewed applications, coordinated multidisciplinary data requests and responses, and coordinated efforts between CEC project management and CH2M HILL staff. Ms. Madams assisted with the development of the security plan and emergency response plan.

Application for Certification, Salton Sea Unit 6 Geothermal Power Plant, Mid-American Energy Holding Company, Imperial County, California (2002 to 2004). Project Coordinator for the licensing of the 185-MW geothermal power plant. The power plant design was based on the flash geothermal power plant process, which produces both solid and liquid byproducts that required disposal. The project site was in a rural area of Imperial County, but was adjacent to a National Wildlife Refuge that supports significant populations of avian species. The licensing process involved the review of all environmental areas, and specifically focused on waste disposal, air quality, hazardous materials handling, and biological resources. Ms. Madams was responsible for the development and tracking of data response submittals requested by the CEC. The project was successfully completed, with a license issued by the CEC.

Various Power Plant Applications for Certification (AFCs) – Prepared or assisted on the Worker Health and Safety sections. In addition prepared Field Safety Instructions, Health and Safety Plans and served as the Site Safety Coordinator for the following power plant Applications for Certification:

- San Francisco Electric Reliability Project (2003 to present)
- Walnut Creek Energy Park (2005 to present)
- Sun Valley Energy Project (2005 to present)
- Confidential Southern California Power Project (2004 to present)

Air Quality Audits, SMUD, California (2004). Conducted air quality audits of the Central Valley Finance Authority's Carson Energy Facility and McClellan Gas Turbine Facility. Responsibilities included assisting with the development of the pre-audit checklist and field interview forms, conducting field interviews and audits, and assisting with summarizing and presenting findings in the final audit report.

Initial Study, August Substation, Turlock Irrigation District, California (2004). Managed the preparation of an Initial Study for the construction and operation of a proposed substation in Hilmar. The IS evaluated all environmental resources and identified mitigation for significant impacts. She also prepared the hazardous materials portion of the IS.

Environmental Assessment, Sierra Army Depot, Herlong, California (2003). Assisted in preparation of the hazardous materials impacts and mitigation for the Environmental Assessment for the Child Development Center and Railroad Loop project at Sierra Army Depot. The EA evaluated the potential impacts on biological resources, hazardous materials, and visual resources for the two proposed projects.

Environmental Assessment, Federal Highway Administration, Hyampom, California (2003 to present). Prepared the hazardous materials impacts and mitigation for the Environmental Assessment for the reconstruction of California Forest Highway 114 in the Shasta-Trinity National Forest. An initial site assessment for the route was prepared in conjunction with the EA.

Health and Safety Audits, Various Clients, Bay Area, California (1998 to 1999). Managed environmental health and safety compliance programs for multiple confidential clients within the San Francisco Bay Area. Performed weekly site inspections of hazardous waste storage facilities and satellite accumulation areas. Reviewed safety plans and conducted safety inspections in preparation for Cal-OSHA audits. Prepared reports of findings, advised clients on compliance deficiencies, and corrected deficiencies prior to audits. Collected, profiled, packaged, and shipped hazardous waste from customer site to Treatment, Storage and Disposal Facilities (TSDF)

Karen Parker

Hazardous Materials Management and Waste Management

Education

B.S., Environmental Studies

Professional Registrations

Certified Hazardous Materials Manager

Relevant Experience

Ms. Parker has more than 23 years of experience in environmental compliance, including hazardous materials, hazardous and solid waste, underground storage tanks, site remediation, permitting, waste minimization, air quality, and water quality. Ms. Parker is also an experienced project manager.

Representative Projects

Energy Facility Siting Applications, Various Locations. Prepared, reviewed, or supervised the preparation of hazardous materials and waste management elements for a number of AFCs submitted to the CEC for siting of new electric power plants in California. Projects include: **Cosumnes Power Plant (SMUD) (2001 to 2003), Walnut Energy Center (Turlock Irrigation District) (2002 to 2004), Woodland Generation Station (Modesto Irrigation District) (2001 to 2004 – includes construction), MEGS (MID) (2002 to 2003), Roseville Energy Park (Roseville Electric) (2004 to 2005), and San Francisco Energy Reliability Project (San Francisco Public Utilities Commission) (2003 to 2005), Los Esteros Critical Energy Facility (Calpine) (2001 to 2002), San Joaquin Valley Energy Center (Calpine) (2001 to 2002), and East Altamont Energy Center (Calpine) (2001 to 2002).**

Electric Power Plant Construction, Various Locations. Completed documentation required prior to mobilization for construction under energy facility licensing conditions imposed by the California Energy Commission. Documents included Fugitive Dust Management Plans, Hazardous Materials Business Plans, Cultural Resources Monitoring and Mitigation Plans, Paleontological Resources Monitoring and Mitigation Plans, Biological Resources Mitigation Implementation and Monitoring Plans, Waste Management Plans, and Construction Worker Training Plans. Facilities were located in or near Sacramento, San Jose, Pittsburg, Modesto, and Turlock e.g., LMEC (2001 – construction), MEC (1999 to 2003).

Natural Gas Pipeline Interconnector Permitting, Sacramento River Delta. Coordinated a review of environmental impacts of constructing a pipeline interconnector for transport of natural gas from a well field in central California to Bay Area power plants. Project included wetlands assessment, endangered species identification, and permitting associated with stream and river crossings.

New Power Plant Siting, Various Locations. Prepared elements of Environmental Impact Statements and air quality permit applications for the siting of new power plants in Southern California, Utah, Southern Nevada, and Illinois.

Natural Gas Dehydration Stations, Various Locations. Determined the need for and prepared applications for hazardous materials storage permits at several new natural gas dehydration stations in Northern California. Conducted site reconnaissance at a number of existing dehydration and compressor stations to determine the presence of underground storage tanks that may require closure or upgrading to meet new EPA requirements.

Due Diligence, Existing Fossil-Fuel Fired Power Plants, San Francisco Bay Area. Performed an environmental due diligence assessment for a prospective purchaser of four existing Bay Area electric power generating plants as part of the state-required divestiture of power generation assets by PG&E.

Cogeneration Facilities, Northern California. Managed assessments of permitting requirements for two cogeneration facilities in northern California. Assessments covered air permitting, land use, hazardous materials management, water supply and disposal, and waste management issues.

Environmental Impact Report, Downtown-Natomas-Airport, Sacramento. Participated in preparation and review of hazardous materials section of an Environmental Impact Report for a planned extension of the City of Sacramento's light rail system from downtown Sacramento to the Sacramento International Airport.

Hazardous Waste Site Identification and Compliance Study, PG&E, Walnut Creek. Provided assistance to the Gas Services Division of PG&E periodically with hazardous waste identification and compliance with underground storage tank requirements.

Hazardous Waste Identification, Sacramento River Water Intake Construction Project. Prepared a site sampling and analysis plan and evaluated the applicability of hazardous waste regulatory requirements to soil contaminated by previous industrial operations at a former Superfund site.

Hazardous Waste Disposal Study, U.S. Air Force, Sacramento. Managed project involving the sampling and analysis of the concrete substructure of a Titan III rocket test stand at an aerospace manufacturing facility. Assessed the extent of contamination of the structure and identified alternatives for demolition of the structure and disposal of the demolition debris in compliance with regulatory requirements.

Sampling and Analysis Plan, Beale Air Force Base, Marysville. Reviewed waste disposal alternatives for remediation-derived wastes (RDW) and developed a detailed RDW management plan and standard operating procedures for waste disposal.

Tom Priestley, Ph.D.

Visual Resources Senior Reviewer

Education

Ph.D., Environmental Planning
M.L.A., Environmental Planning
M.C.P., City Planning
B.U.P., Urban Planning

Relevant Experience

Dr. Priestley has over 25 years of professional experience in urban and environmental planning and project assessment. He has broad knowledge of methods used for siting electric generation, transmission, and substation facilities and mitigating their land use and aesthetic effects. He has specialized expertise in evaluation of project visual impacts, and has been involved in more than 75 visual assessment efforts. As the senior professional in the visual resources practice in CH2M HILL's Western Region, he has oversight of visual resource analysis activities in the western states, with an emphasis on issue scoping, study design, mobilization of appropriate staff and technologies, and senior review of final products.

Representative Projects

Visual Resource Impact Analyses of Gas-fired Power Plants, Various Locations, California.

As the project analyst, senior advisor/reviewer, or special consultant, involved in the evaluation of the potential visual resources impacts of 18 major gas-fired power plant projects proposed for a variety of urban and rural settings in both Southern and Northern California. Identified visual issues, designed the analysis strategies, contributed to development of architectural and landscape treatments, prepared visual resource analyses for the Applications for Certification submitted to the California Energy Commission, reviewed and critiqued relevant sections of the Energy Commission's analyses of the projects, and evaluated the visual issues associated with CEC-proposed alternative sites. As an expert witness on visual resources, prepared written testimony and provided oral testimony in hearings before the California Energy Commission. Specific projects for which Dr. Priestley has made major contributions to the evaluation of visual resource issues include:

- Confidential Southern California Project, San Bernardino County, California (2005)
- Inland Empire Energy Center, Riverside County, California (2001 to 2003)
- Salton Sea Geothermal Unit 6, Imperial County, California (2002 to 2003)
- Metcalf Energy Center, Santa Clara County, California (1998 to present)
- East Altamont Energy Center, Alameda County, California (2001 to 2003)
- Los Esteros Critical Energy Facility, Santa Clara County, California (2001)
- San Francisco Electric Reliability Project, San Francisco, California (2003 to present)
- Modesto Irrigation District Electric Generation Station, San Joaquin County, California (2003 to 2004)

- Walnut Energy Center, Stanislaus County, California 2002 to present)
- Woodland Generation Station 2, Stanislaus County, California (2001 to 2003)
- Delta Energy Center, Contra Costa County, California (1998 to 2003)
- Sutter Power Project, Sutter County, California (1997 to 1999)
- Gilroy Energy Center Phase I and Phase II Projects, Santa Clara County, California (2001 to 2002)
- Rio Linda Power Plant, Sacramento County, California (2000 to 2001)
- Newark Energy Center, Alameda County, California (1999)
- Elk Hills Power Project, Kern County, California (1988 to 1989)
- San Joaquin Valley Energy Center AFC (2001 to 2003)
- SMUD Cosumnes Power Plant AFC (2001 to 2003)

Los Medanos Energy Center, Contra Costa County, California (2000). Provided post-licensing assistance to the client related to visual resource issues associated with this 500-MW combined-cycle power plant located in the City of Pittsburg. Assisted the applicant in selecting color treatment for project facilities and with securing of CEC approval. Consulted on the development of a landscape plan to mitigate the visual effects of a relocated underground transmission line and assisted in securing CEC approval of the mitigation plan.

Proponent's Environmental Assessment, Valley-Auld Transmission Line, Riverside County (1998). Scoped visual issues associated with a proposed 12-mile, 115-kV Southern California Edison transmission line, conducted visual analyses, prepared the visual analysis report, and proposed mitigation measures to reduce the project's visual effects to less than significant levels in preparation for filing of a permit application with the CPUC.

Proponent's Environmental Assessment, Jefferson-Martin Transmission Project, San Mateo County (2002 to 2004). Senior reviewer and consultant for an analysis of the aesthetic issues associated with the proposed replacement of a 14.7-mile segment of an existing transmission line with a 230-kV line on larger towers. The transmission line's location in an open space area prized for its scenic qualities and in proximity to affluent residential areas made the visual issues a sensitive and critical dimension of this project, requiring an intensive degree of analysis.

Jerry Salamy

Alternatives

Education

B.A., Chemistry

Relevant Experience

Mr. Salamy has more than 19 years of consulting experience licensing new industrial energy-related sources. He has prepared numerous Prevention of Significant Deterioration Pre-Construction Air Quality Permit Applications, prepared project permitability studies, assessed industrial facilities compliance with state and federal air pollution rules and regulations, and assisted power plant clients with compliance-related issues. Mr. Salamy has also served as Project Manager for several Applications for Certification before the California Energy Commission.

Representative Projects

Confidential Southern California Power Project (2004 to present). Preparing the air quality permits and AFC for 300 megawatt (MW) peaking facility consisting of three natural-gas-fired turbines and associated equipment. The project will employ General Electric's LMS100 combustion turbine generators (CTG) that integrate new technology to increase the combustion turbine's efficiency above existing turbine technologies.

Air Quality Audits, Calpine Corp., Northern California (2004 to 2005). Participated in the multimedia auditing of Calpine's power plants in Northern California. He conducted air quality audits of the **Delta Energy Center** and **Los Medanos Energy Center** facilities. Mr. Salamy's responsibilities included participating in the development of the pre-audit checklist and field interview forms; conducting kick-off, pre-audit, and close-out audit meetings; conducting field interviews and audits; summarizing and presenting findings; and preparing the final audit report.

Prevention of Significant Deterioration (PSD) Permit; Solano Cogeneration Incorporated; Martinez, California (1996). Managed preparation of a PSD Permit for a gas turbine cogeneration facility located in Martinez, California. Permit preparation involved defining the exhaust stack height, and emission characteristics. In addition to the permit preparation, was responsible for identifying and negotiating for the transfer of emission reduction credits necessary for the permitting of the project.

Title V Air Operating Permit; Nevada Sun-Peak Power Limited Partnership; Las Vegas, Nevada (1993 to 1994). Prepared a Title V air operating permit application for three simple-cycle GE Frame 7EA combustion turbines and other minor sources (including fugitive emission sources). The Title V permit application was required for submittal to the Clark County Health District in conformance with the 1990 Clean Air Act Amendments. The Title V permit application included a detailed emission inventory, a review of applicable regulations, alternative operating scenarios, and a compliance determination.

Regulatory Analysis for Major Modification to Texaco's El Dorado Refinery; Texaco Refining and Marketing, El Dorado, Kansas (1991). Analyzed the relevant air quality issues for a major modification to Texaco's El Dorado Refinery. Project consisted of identifying applicable federal and state regulations, permitting, emission testing, and monitoring requirements. Assisted in specifying emission monitoring systems and sampling locations.

Pinyon Pine Power Project Prevention of Significant Deterioration (PSD) Permit; Sierra Pacific Power Company (1990). Managed the preparation of a PSD Permit application for the demonstration of an integrated coal gasification combined-cycle power plant. The project required a regulatory review, development of a comprehensive emission database of all emission sources within the area, performance of a BACT analysis, and air dispersion modeling utilizing the EPA's Complex Terrain Dispersion Model (CTDM). Submitted the PSD permit application to the Nevada Division of Environmental Protection to satisfy Nevada's Prevention of Significant Deterioration Permit Program.

Sutter Power Plant Application for Certification (AFC); Calpine Corporation; Yuba City, California (1998 to 2000). Managed the preparation of the air quality section of Calpine Corporation's Sutter Power Plant AFC. The air quality analysis required the preparation of an environmental setting for the project site, a criteria and toxic pollutant emission inventory, a best available control technology analysis, and air dispersion modeling. These analyses were used to support the preparation of a Prevention of Significant Deterioration and New Source Review permit applications. These applications were submitted to the United State Environmental Protection Agency's Region IX office and the Feather River Air Quality Management District for the issuance of a construction permits. The scope of work also required the identification of emission reduction credits (ERCs) to support the New Source Review permitting process.

Continuous Emission Monitoring System (CEMS) Project Management; Rhône-Poulenc Basic Chemicals Company, Carson, California (1992 to 1993). Managed the specification, vendor selection, installation, and certification of a CEMS. The CEMS was required by the South Coast Air Quality Management District's Regional Clean Air Incentives Market (RECLAIM) regulations. The project required the preparation of detailed performance specifications (used in soliciting bids from vendors), developing vendor recommendations, coordinating delivery and installation schedules, and managing onsite certification of the CEMS.

Power Plant Licensing and Permitting Program, Calpine Corporation (1998 to 2005). Project Manager for several Applications for Certification before the California Energy Commission for Calpine's **Delta Energy Center** in Contra Costa County, **East Altamont Energy Center** in Alameda County, **Los Esteros Critical Energy Facility** in Santa Clara County as well as AFCs for three peaking power plants licensed under the CEC's emergency AB970 licensing process. Managed multidisciplinary teams of scientists, planners, and engineers in preparing and filing the license applications, preparing Data Request Responses, attending workshops and providing expert testimony before the licensing hearings. Also prepared preconstruction monitoring plans and provided construction monitoring and compliance services.

Steve Smith, A.I.C.P.

Land Use

Education

M.S., Environmental Studies

B.A., Economics

Professional Registrations

Certified Planner, American Institute of Certified Planners

Relevant Experience

Mr. Smith has more than 10 years of experience in the preparation of EIRs, EISs, Environmental Assessments, CWA Section 404 and 401 permit applications, and other environmental services related to land use development projects, infrastructure projects, and planning programs. He specializes in the management and preparation of environmental documentation in accordance with CEQA and NEPA.

Representative Projects

San Francisco Energy Reliability Project (2003 to present). Analyzed potential land uses impacts associated with the proposed expansion of existing electrical generation facilities at the Potrero power plant site in southeastern San Francisco. Assessed potential effects of the proposed expansion on existing and planned development in the project vicinity, including lands managed by the Port of San Francisco. Prepared subsequent documentation analyzing an alternative project site located approximately one-quarter mile south of the Potrero power plant. The documentation was prepared for integration into the application for certification (AFC) required for approval from the California Energy Commission.

Eastern Municipal Water District, Southern California (2000 to 2001). Managed and prepared the environmental documentation for two concurrent EMWD projects. The first Initial Study/Mitigated Negative Declaration (IS/MND) analyzed the impacts associated with a desalination project in the San Jacinto Water Basin. Project alternatives involved the construction and operation of up to seven groundwater extraction wells, a conveyance system, and treatment facilities, each with the objective of stabilizing the level of brine intrusion into the existing potable water supply aquifer. The second IS/MND was for a 10-mgd water treatment facility on approximately 10 acres of agricultural lands in a rapidly urbanizing area of Perris.

West Mojave Plan, Southern California (2001 to 2002). Managed the planning process for the off-highway vehicle (OHV) network located within approximately 2 million acres of the West Mojave desert. This was done as a component of the Habitat Conservation Plan (HCP) under preparation by the Bureau of Land Management (BLM) for the federally threatened desert tortoise. He supervised GIS staff and prepared supporting documentation justifying the designation of routes as either “open,” “closed,” or “limited use.” He managed a GPS ground

survey encompassing approximately 1 million acres of OHV routes involving approximately one dozen survey teams.

Imperial Sand Dunes Recreation Area, Imperial County, California (2001 to 2002). Assisted in the management of the draft EIS addressing the implementation of a proposed Recreation Area Management Plan (RAMP) prepared by BLM for an approximately 200,000-acre sand dune ecosystem in Imperial County. The project area maintains several plant and animal species listed under the federal Endangered Species Act, while supporting an estimated 1 million visitors engaged primarily in OHV activity. He coordinated with the client and internal and subcontracted project team members, and formulated project alternatives that have the overall goal of preserving sensitive species while allowing for continued enhanced OHV use.

Anaheim Stadium Master Land Use Plan (1999). Assisted in the management of a Master EIR relating to the implementation of the 550-acre Stadium Planning Area Master Plan consisting of approximately 13 million square feet of mixed commercial development in the City of Anaheim. This project won an American Planning Association (APA) award for outstanding planning project.

Imperial Highway Improvement Project, Yorba Linda (1999). Assisted in the preparation of the Initial Study and focused EIR for improvements to the Imperial Highway. The project involved widening, synchronization, additional turn lanes, landscaping, and other features throughout the 8-mile portion of the highway.

SR-79 Project (2005). Technical lead for the land use section of the environmental document prepared for this project.

Owens Lake Dust Control Project, Los Angeles Department of Water and Power (2000). Provided site level construction monitoring, ensuring conformance to the mitigation monitoring plan adopted for implementation of the Owens Lake Dust Control Project. He used GPS to confirm the locations of identified California rare plant species.

Santa Ana River Mainstem (1998 to 2000). Managed a EIS/EIR for the Santa Ana River Mainstem project relating to flood control improvements in the Prado Basin and vicinity for the U.S. Army Corps of Engineers and the Counties of Orange, Riverside, and San Bernardino.

Prado Flood Control Basin, Southern California (1998 to 2000). Assisted in the management of an EIS/EIR describing the environmental impacts associated with the implementation of water conservation measures at the Prado Flood Control Basin.

Whittier Narrows Environmental Assessment, Southern California (2000). Assisted in the preparation of an Environmental Assessment for the Environmental Protection Agency and U.S. Army Corps of Engineers addressing the potential impacts associated with implementation of a Superfund remediation strategy at the Whittier Narrows Dam Basin.

Geof Spaulding

Paleontologic Resources

Education

Ph.D., Geology (Paleobiology)

M. S., Geology (Palynology & Vertebrate Paleobiology)

B. A., Anthropology

Registrations

- Approved Paleontologic Resources Specialist by the California Energy Commission, State of California
- Qualifications as Paleontological Resources Expert Witness accepted by the Attorney General of the State of Washington

Relevant Experience

Dr. Spaulding is a senior scientist and paleontologist with CH2M HILL with extensive experience in paleobiology, paleontology, and paleoecology. He also is accomplished in the study of site formation processes, and the age determinations of archaeological and paleontologic sites in the western United States. He has more than three decades of technical experience in the Earth and Life sciences focusing on the deserts of western North America and on California. Representative projects that he has managed in the last 15 years are listed below. Prior to joining private industry, he was on the faculty of the University of Washington, Seattle.

Representative Projects

Paleontologic Resources Specialist, Confidential Southern California Project (2005). Develop a Paleontologic Resources Assessment and prepare appropriate documentation on paleontologic resources for the projects' Application for Certification before the California Energy Commission. Determine the relative levels of paleontologic sensitivity of Mesozoic through Quaternary rock units in the context of the geological history of the Perris Plain and Riverside area, develop the scope for and direct the field survey, and prepare the resource specific documentation.

Paleontologic Resources Specialist, Turlock Irrigation District's Walnut Energy Facility (2003 to 2005). Develop and manage paleontologic resources monitoring and mitigation program for the construction of the Walnut Energy Center south of Modesto, California. Prepare Paleontologic Resources Management and Discovery Plans, the Paleontologic Resources Module of the worker education program, and visual aids for worker education. Direct the recovery of discovered paleontologic resources (Quaternary vertebrate remains), and consult with the California Energy Commission on the adequacy of mitigation efforts. Develop site-specific stratigraphic framework to identify paleontologically sensitive sediments, and to provide client and the CEC with guidance regarding what construction activities need and need not be monitored.

Paleontologic Resources Specialist, San Francisco Public Utility Commission's San Francisco Electric Reliability Center (2004 to 2005). Develop a Paleontologic Resources Assessment and prepare appropriate documentation on paleontologic resources for the projects' Application for Certification before the California Energy Commission. Review the complex literature and determine the relative levels of paleontologic sensitivity for marine and terrestrial sedimentary units rock units in the San Francisco Bay area. Prepare the resource specific documentation including impacts assessment and mitigation measures.

Client Task Oversight & Expert Witness Testimony On Paleontologic Resources Sensitivity (1997 to 1998). Review and develop discovery and mitigation plans, and provide testimony to the Attorney General of the State of Washington. On the paleontologic data potential and impacts to Middle Tertiary age fossil resources in the Columbia Basin, and on potential project-related impacts pursuant to Washington's Energy Facility Siting & Environmental Certification process, on behalf of Olympic Pipeline Corporation.

Paleontologic Resources Management Services, southern California (1995 to 1999). Perform paleontologic resources assessments, develop management and monitoring plans, review and amend subconsultant scopes of work, and provide audit services to clients for paleontologic resources management work. Multiple contracts for the City of San Diego, the Regional Transportation Commission, Riverside County Transportation Commission, and the Counties of San Diego and Orange. Formations addressed included Quaternary terrestrial and lacustrine units, and Tertiary marine and estuarine sediments.

Paleontologic Resources Assessment & Mitigation Plan Development, McKittrick Tar Pits, central California (1993). Review the extensive literature; develop a resources assessment and preliminary management plan for paleontologic resources in the vicinity of the renowned McKittrick Tar Pits in the Central Valley for a confidential client interested in the development of the oil-rich diatomites and sands of the area.

Duke Energy of North America, Paleontologic Support Services for The Potrero and Contra Costa Applications For Certification (1996 to 1998). Conduct literature reviews, record searches, and site surveys; and prepare appropriate sections of Applications for Certification according to the format and data requirements of the California Energy Commission. Respond to CEC staff questions and requests for additional data. Provide cost-control strategies to client. In support of the relicensing efforts for two power plants in the Bay Area of California.

Owens Lake Air Quality Mitigation Program, Paleontologic Resources Review and Strategy Development (2003). Review resource assessments and draft mitigation plans on the clients behalf to assure that mitigation measures called for are consistent with the resources that may be found in the project area. Audit of consultant work to assure economy of scale in mitigation requirements.

Fatuma Yusuf

Socioeconomics

Education

Ph.D., Agricultural Economics

M.S., Statistics

M.A., Agricultural Economics

B.Sc., Range Management

Relevant Experience

Dr. Yusuf is an economist and statistician who specializes in quantitative analysis, with solid knowledge of econometrics as well as operations research methodology. She has conducted economic analyses for water quality, agriculture, transportation, recreation, and energy projects; evaluated project feasibility; and assessed economic impacts associated with project implementation. She has experience in preparing the socioeconomic analysis for power plant permitting and other environmental documents. She also has experience in the development of statistical predictive models for condition assessments involving pipeline deterioration and factors leading to pipeline deterioration.

Representative Projects

Roseville Energy Park, California (2004). Analyzed the regional economic impacts of the project on employment and income.

Confidential Southern California Power Project (2005). Socioeconomics Task Lead. Prepared the socioeconomic analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Application for Certification the Walnut Energy Facility in Turlock, California (2002 to 2003). Socioeconomics Task Lead. Prepared the socioeconomic analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Application for Certification for Los Esteros Critical Energy Facility, San Jose, California (2001 to 2004). Prepared the socioeconomic analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Application for Certification for the San Francisco Electric Reliability Project in San Francisco, California (2003 to 2005). Socioeconomics Task Lead. Prepared the socioeconomic analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

San Joaquin Valley Energy Center AFC, Calpine Corp., San Joaquin, California (2001 to 2002). Socioeconomics Task Lead. Prepared the socioeconomic analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

East Altamont Energy Center AFC (2001). Prepared the socioeconomics analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Salton Sea Unit 6 Geothermal Project (2002 to 2003). Prepared the socioeconomics analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Small Power Plant Exemption for Modesto Irrigation District's Woodland Generation Station Unit II (WGSII), Modesto Irrigation District, Modesto, California (2003 to 2004). Economics Task Lead. Prepared the socioeconomics analysis section of the SPPE.

SMUD Cosumnes Power Plant AFC (2001). Prepared the socioeconomics analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Socioeconomic Study Plan for the SMUD Upper American River Project Iowa Hill Pumped Storage Development Project (2004 to 2005). Socioeconomic Task Lead. Prepared the socioeconomic study plan and evaluated the socioeconomic impacts associated with the Iowa Hill Pumped Storage Development Project as part of the SMUD Upper American River Project Hydroelectric relicensing application. Also, analyzed the regional economic impacts of the project on employment and income.

Revision of SMUD Upper American River Project Socioeconomic Impact Study Report (2004). Socioeconomic Task Lead. Prepared Revision 1 of the SMUD UARP Socioeconomic Impact Study Report on the SMUD Upper American River Project Hydroelectric relicensing. Revision 1 involved the verification of the study conducted by CSUS. Also, analyzed the regional economic impacts of the project on employment and income.

Economic Analysis for the Calpine LNG Facility and Power Plant in Eureka, California (2004). Project Manager. Provided a screening-level economic, socioeconomic and fiscal impact analyses of the construction and operation associated with the Calpine LNG and Power Plant Projects in Eureka, California.

Agricultural Impact Study of the PacifiCorp's Hydroelectric Power Project (2004). Analyzed the socioeconomic and regional economic impacts associated with the increased energy costs faced by Klamath irrigators. Prepared the regional economic impact report.

Klamath Hydroelectric Project Resources Studies and Preparation of Relicensing Documents, PacifiCorp, Upper Klamath River, Oregon and California (2003 to 2004). Prepared the Socioeconomic Resources Final Technical Report in support of the FERC application for a new Project license.

South Delta Improvement Project Draft EIS/EIR (2003). Social and Economics Task Lead. Prepared the social and economics analysis section of the Draft SDIP EIR/EIS for the California Department of Water Resources (DWR).

Appendix B, List of Proposed Exhibits

Exhibit Name	Technical Area(s)
Air Quality Modeling Files in support of Application for Certification, dated March 2004. (Docket No. 31127)	Air Quality
Supplement in Response to Data Adequacy Comments on the Application for Certification for the San Francisco Electric Reliability Project, dated April 16, 2004 (Docket No. 31268)	Air Quality, Cultural Resources, Reliability, Traffic & Transportation, Transmission System Engineering, Water Resources
Applicant's Response to CEC Staff Data Requests, Set 1A, dated July 6, 2004. Responses to Data Requests 1 through 11. (Docket No. 31854)	Air Quality, Alternatives, Cultural Resources, Hazardous Materials, Land Use, Public Health, Soil and Water, Traffic & Transportation, Transmission Systems Engineering, Visual Resources, Waste Management
Applicant's Response to CEC Staff Data Requests, Set 1B, dated July 12, 2004	Soil & Water Resources
Applicant's Response to CEC Staff Data Requests, Set 1D, dated August 27, 2004, Response to Data Request 5. (Docket No. 32218)	Air Quality
Applicant's Response to CEC Staff Data Requests, Set 2A, dated October 12, 2004 (Docket No. 32474)	Biological Resources
Applicant's Response to CEC Staff Data Requests, Informal Set 1, Revised, dated August 2, 2004.	Worker Safety & Fire Protection, Visual Resources
Applicant's Response to CEC Staff Data Requests, Informal Set 2, dated August 20, 2004. (Docket No. 32145)	Public Health
Applicant's Response to CEC Staff Data Requests, Informal Set 3, dated August 20, 2004. (Docket No. 32146)	Land Use, Noise and Vibration, Soil & Water, Waste Management, Transmission System Engineering, Air Quality
Applicant's Response to CEC Staff Data Requests, Informal Set 4, dated August 27, 2004.	Noise, Reliability, Project Description
Applicant's Response to CEC Staff Data Requests, Informal Set 5, dated September 20, 2004.	Socioeconomics
Applicant's Response to SF Power Data Requests, Set 1, dated August 18, 2004, Responses to Data Requests 6, 8 and 9 (Docket No. 32141)	Project Description, Air Quality
Applicant's Response to CARE Data Requests, Set 1, dated September 7, 2004, Responses to Data Requests 1.4a through 1.4c. (Docket No. 32302)	Air Quality, Purpose and Need, Alternatives, Environmental Justice
Application for Determination of Compliance and Authority to Construct, filed with the BAAQMD, dated March 15, 2005. (Docket No. 33763)	Air Quality
Supplement A to the Application for Certification for the San Francisco Electric Reliability Project, Volumes 1 and 2, dated March 24, 2005, (Docket No. 34403)	All areas

Appendix B, List of Proposed Exhibits

Exhibit Name	Technical Area(s)
Supplement B to the Application for Certification for the San Francisco Electric Reliability Project (Volumes 1 & 2) dated January 11, 2006.	Air Quality, Public Health, Hazardous Materials Management, Waste Management, Worker Safety and Fire Protection, Biological Resources, Cultural Resources, Geology and Paleontology, Soils and Water Resources, Land Use, Traffic and Transportation, Visual Resources, Noise and Vibration, Socioeconomics
Amendment to the Project Description, Vegetated Swale, dated November 18, 2005	Project Description, Soil and Water Resources
Amendment to the Project Description, Process and Cooling Water Supply, dated December 20, 2005	Project Description, Soil and Water Resources
Applicant's Response to CEC Staff Data Requests, Set 3A, dated June 3, 2005	Cultural Resources, Efficiency, Noise, Transmission System Engineering, Waste Management, Soil and Water Resources, Visual Resources
Applicant's Response to CEC Staff Data Requests, Set 3B, dated June 22, 2005	Transmission System Engineering
Applicant's Response to CEC Staff Data Requests, Set 3C, dated July 19, 2005	Cultural Resources, Transmission System Engineering, Soil and Water Resources
Applicant's Response to CEC Staff Data Requests, Set 3D, dated September 13, 2005	Cultural Resources
Applicant's Response to CEC Staff Data Requests, Set 3E, dated October 6, 2005	Cultural Resources
Applicant's Response to CEC Staff Data Requests, Set 3F, dated January 11, 2006	Soil and Water Resources
Applicant's Response to CARE Data Requests, Set 3, dated June 9, 2005 (Docket No. 34572)	Reliability, Alternatives, Air Quality, Purpose and Need, Public Health, Noise, and Biological Resources
Applicant's Response to CARE Data Requests, Set 3B, dated June 22, 2005	Alternatives; Purpose and Need
Applicant's Response to Sarvey Data Requests, Set 1A, dated July 25, 2005 (Docket No. 35061)	Project Objectives, Air Quality, Hazardous Materials, Waste Management, Water Resources
Applicant's Response to Sarvey Data Requests, Set 1B, dated October 6, 2005	Air Quality
Applicant's Response to CEC Staff's Informal Data Requests, Set 6, dated July 11, 2005	Air Quality, Soil & Water Resources
Applicant's Response to CEC Staff's Informal Data Requests, Set 6B, dated August 10, 2005	Soil & Water Resources
Applicant's Response to CEC Staff's Informal Data Requests, Set 6C, dated August 25, 2005	Soil & Water Resources
Applicant's Response to CEC Staff's Informal Data Requests, Set 6D, dated October 14, 2005	Soil & Water Resources

Appendix B, List of Proposed Exhibits

Exhibit Name	Technical Area(s)
Applicant's Response to CEC Staff's Informal Data Requests, Set 6D, Addendum, dated October 22, 2005	Soil & Water Resources
Applicant's Response to CEC Staff's Informal Data Requests, Set 7, dated July 16, 2005	Cultural Resources
Applicant's Response to CEC Staff's Informal Data Requests, Set 8, dated October 7, 2005	Geological Resources
Applicant's Response to CEC Staff's Informal Data Requests, Set 9A, dated January 13, 2006	Soil & Water Resources
Applicant's Response to CEC Staff's Informal Data Requests, Set 9B, dated January 19, 2006	Soil & Water Resources
Applicant's "Air Quality Mitigation and Community Benefits Plan", dated August 4, 2005. (Docket No. 35159)	Air Quality
Applicant's Comments on the Preliminary Staff Assessment, Set 1, dated October 12, 2005. (Docket No. 35667)	Environmental Justice, Project Description, Air Quality, Biological Resources, Cultural Resources, Hazardous Materials, Noise & Vibration, Public Health, Soil & Water, Traffic & Transportation, Visual Resources, Waste Management, Worker Safety & Fire Protection, Geological Resources, Paleontological Resources, Local System Effects, Alternatives, General Conditions
Applicant's Comments on the Preliminary Staff Assessment, Set 2, dated October 31, 2005. (Docket No. 35823)	Air Quality, Hazardous Materials Handling, Land Use, Socioeconomics, Travel & Transportation, Waste Management, Soil & Water Resources, Worker Safety & Fire Protection.
Applicant's Comments on the Preliminary Staff Assessment, Set 3, dated November 11, 2005	Soil & Water Resources, Waste Management
Applicant's Comments on the Preliminary Staff Assessment, Set 4, dated December 7, 2005	Waste Management
Applicant's Comments on the Preliminary Staff Assessment, Set 4, Revised, dated December 30, 2005	Waste Management
Applicant's Final Field Sampling Plan, dated February 14, 2006	Waste Management
Applicant's Comments on the Final Staff Assessment, Set 1, dated March 17, 2006	Air Quality, Cultural Resources, Hazardous Materials Handling, Noise & Vibration, Soil & Water, Waste Management, Paleontological Resources